EMERSUB 16, LLC

2022 OPERATIONS, MAINTENANCE, AND MONITORING REPORT – HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM

FORMER KOP-FLEX PROPERTY
7555 HARMANS ROAD, HANOVER, MARYLAND
BROWNFIELD MASTER INVENTORY #MD0286

JULY 19, 2023



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EMERSUB 16, LLC

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EXECUTIVE SUMMARY

WSP USA Inc. (WSP) has prepared this Operations, Maintenance, and Monitoring (OM&M) Report to evaluate the performance of the groundwater corrective measures implemented at the Former Kop-Flex property located at 7555 Harmans Road in Hanover, Maryland (the Site). This report describes the operation (including maintenance activities) and effectiveness of the hydraulic containment and treatment system (the System) in mitigating groundwater quality impacts to the aquifer system for the reporting period of January 1, 2022, through December 31, 2022. WSP is submitting this report on behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co. The Site is currently owned by Catalent Harmans Road, LLC, a subsidiary of Catalent Cell & Gene Therapy (Catalent).

The following Response Action Objectives (RAOs) with respect to groundwater were previously developed for the Site and continue to be used to gauge progress towards cleanup goals (WSP 2015a):

- controlling migration of groundwater with constituents of concern (COCs) exceeding applicable human health criteria beyond the Former Kop-Flex property boundary
- reducing concentrations of COCs in the aquifer system
- restricting groundwater use on the Site to prevent potential exposure to COCs present at concentrations above applicable human health criteria

The System runtime was approximately 63% during the 2022 calendar year. Periods of downtime included scheduled and unscheduled shutdown events, routine maintenance, and replacement of System equipment. There was an extended shutdown of the System starting April 29, 2022, due to consistently elevated pH measurements of the System's boiler blowdown water discharging to the sanitary sewer under an Anne Arundel County (County) Pre-treatment Program discharge permit (Wastewater Discharge Permit). The System remained nonoperational until August 8, when modifications were made to the System for interim management of the boiler blowdown discharge. These modifications involved rerouting the blowdown water to an onsite frac tank for subsequent pH adjustment and discharge to the sanitary sewer system in accordance with the County Wastewater Discharge Permit. The long-term approach for management of the boiler blowdown discharge will be the addition of this water to the extracted groundwater flow for treatment through the System.

Iron fouling in recovery well RW-1S caused failure of the submersible pump installed in the well. In response, WSP developed a plan to assess all groundwater recovery wells for possible iron fouling or other impacts that could affect recovery well performance. Yield testing of each of the System recovery wells to assess recovery well performance during June suggested a significant reduction in yield, or specific capacity (well discharge per foot of drawdown), of each of the shallow recovery wells. The camera surveys completed as part of the assessment also revealed the presence of degrading remnants of galvanized steel cable in some of the wells. The cables had been used to secure the submersible pumps during initial System installation. Chemical rehabilitation of the shallow recovery wells to address the biofouling impacts and redevelopment of all recovery wells was completed during July. Redevelopment of the recovery wells allowed for the removal of the corroded security cable from recovery wells RW-3S and RW-1D; some remnants of the security cable remain in RW-2D. Yield testing conducted at each shallow recovery well following rehabilitation indicated a significant increase in well yield at RW-1S and RW-2S, with values consistent with data from the baseline tests conducted following the installation of the wells in the fall of 2016. Yield testing at RW-3S did not show any noticeable improvement in the post-rehabilitation well performance. WSP's belief is that the reduced performance of RW-3S is due to clogging of the sand filter pack and/or borehole wall by clayey sediments and is developing a plan to further evaluate possible rehabilitation measures.

Based on the 2022 operational data, the System processed approximately 21.8 million gallons of groundwater extracted from the five recovery wells. Since System start up in March 2017 through the end of December 2022, the System has treated approximately 165.5 million gallons of water. Approximately 52.6 pounds (lbs.) of Site-related volatile organic compounds (VOCs) and 20.4 lbs. of 1,4-dioxane were recovered from the aquifer during 2022. The removal efficiency of the resin media was 100% for VOCs and approximately 98.6% for 1,4-dioxane. A total of approximately 650 lbs. of Site-related VOCs and 1,4-dioxane have been removed since initiation of corrective measures through the end of the 2022 calendar year.

Analysis of the treated water (*i.e.*, effluent) samples during 2022 indicated non-detect concentrations of VOCs and non-detect to low levels of 1,4-dioxane, with detected concentrations ranging from 1.0 micrograms per liter (µg/L) to 6.6 µg/L. There were no exceedances of the National Pollutant Discharge Elimination System (NPDES) discharge permit limits or the Site-specific 1,4-dioxane cleanup level during the reporting period. The 1,4-dioxane concentrations in the samples reflected a decrease in the treatment, or adsorptive, capacity of the resin, a condition that was initially identified during sampling

conducted in December 2018 and was further investigated during 2019. The reduction in the resin's 1,4-dioxane adsorptive capacity is caused by a buildup of organic constituents that are not removed during steam regeneration of the resin. A regeneration reset, which involves temporarily shutting down the System to allow for the steam regeneration of both resin vessels to remove VOCs and 1,4-dioxane, was completed to maintain System treatment capacity. Cleaning of the resin using a heated caustic solution to remove the buildup of organic foulants was determined to be unnecessary during 2022 due to reduced System runtime.

Since the System was shut down during the spring (May) 2022 sampling event, the groundwater elevations provided data under non-pumping conditions for the aquifer system at the Site. The groundwater contour maps indicate that groundwater flows to the west and northwest in the shallow zone of the Lower Patapsco Aquifer (LPA). The overall hydraulic gradient indicates that groundwater flow is generally from areas of highly impacted groundwater towards the shallow pumping wells west of the southern building. The May groundwater contour map for the deep (leaky confined) zone of the LPA flows generally south towards the location of the deep pumping wells at the property boundary.

When the System was operational in November 2022, two well developed areas of drawdown located in the shallow zone and the deep zone of the LPA were observed in response to pumping. These drawdown cones are evidence of an effective capture zone surrounding the pumping wells downgradient of the source areas. Along the same lines, groundwater quality data gathered in 2022 exhibits generally decreasing trends in VOCs and 1,4-dioxane concentrations. The decrease in concentrations is most noticeable in monitoring wells near the limits of the plume areas, suggesting that the System is reducing the extent of contaminant impacts within the aquifer system.

Overall, the 2022 groundwater monitoring data indicates that the RAOs are being achieved for the Site. The operation of the System is deemed necessary during 2023 due to concentrations of VOCs and 1,4-dioxane remaining above the Cleanup Standards. The long-term groundwater monitoring program will continue to evaluate achievement of the groundwater RAOs.

1 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

On behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co., WSP USA Inc. (WSP) is submitting this Annual Operations, Maintenance, and Monitoring (OM&M) Report describing the activities conducted during the 2022 reporting period (January 1, 2022, through December 31, 2022) as part of the corrective measures at the Former Kop-Flex property located at 7555 Harmans Road in Hanover, Maryland (the Site). The Site is identical to the area described as the "Facility" in the U.S. Environmental Protection Agency (EPA) Administrative Order on Consent (Consent Order), Docket No. RCRA-03-2016-0170 CA, Section IV.C.3. This report is being submitted in accordance with Section 14.2 of the October 2015 Response Action Plan (RAP), Revision 2 (WSP 2015a), which requires the submission of OM&M reports to the Maryland Department of the Environment (MDE) and EPA on an annual basis[1]. The Corrective Measures Implementation (CMI) Five-Year Assessment Report, which included OM&M reporting information for calendar year 2021, was submitted to the EPA and MDE in February 2023 (WSP 2023).

1.2 SUMMARY OF CURRENT GROUNDWATER CONDITIONS

The aquifer at the Site is comprised of the Lower Patapsco Aquifer (LPA) of the Atlantic Coastal Plain aquifer system. The primary water-bearing zones in the LPA consist of a shallow (unconfined to semi-confined) zone and deep (confined) zone which are separated by a leaky confining unit of variable thickness. The direction of groundwater movement in the shallow zone mimics the general surface topography and is largely influenced by local surface water features, with flow to the north and west toward Stony Run. Groundwater flow in the deep zone is to the south and east, consistent with the regional groundwater flow in the LPA in this portion of the coastal plain aquifer system. Additional details regarding the Site's hydrogeologic setting are provided in the October 2015 RAP, Revision 2 (WSP 2015a) and subsequent amendments to this document.

Groundwater sampling results confirm the existence of Site-related contaminants in both the shallow and deep portions of the LPA beneath the former Kop-Flex property. The Site-related volatile organic compounds (VOCs) in groundwater consist of 1,1,1-trichloroethane (TCA) and its degradation products 1,1-dichloroethane (DCA) and 1,1-dichloroethene (DCE); and other chlorinated ethenes including cis-1,2-DCE, trichloroethene (TCE), and tetrachloroethene (PCE). Additionally, 1,4-dioxane, an additive historically used in commercial formulations of 1,1,1-TCA solvents, is present in groundwater.

The installation of the hydraulic containment and treatment system (the System) discussed in this report was completed in February 2017 to contain the groundwater plumes in both zones of the LPA. The contaminant plume in the deep confined portion of the LPA extends offsite to the south-southeast from the former Kop-Flex property. Groundwater conditions in the off-property area are described in a separate offsite groundwater monitoring report.

1.3 SYSTEM DESCRIPTION

Pursuant to the requirements under the EPA Consent Order (Section VI.B.1.a.) and RAP, a System has been installed at the Site to control the migration of chlorinated VOCs (CVOCs) and 1,4-dioxane in groundwater. The System involves the continuous extraction and treatment of affected groundwater at the Site. Groundwater is extracted from a network of three shallow recovery wells (RW-1S through RW-3S), screened within the shallow zone of the LPA, and two deep recovery wells (RW-1D and RW-2D), screened in the deep zone of the LPA (Figure 1). The extracted groundwater is routed via underground piping to the System building. Treatment equipment is comprised of a flow equalization (EQ) tank to regulate

[1] Addenda to the approved RAP included the following: Addendum #1 (dated February 24, 2016) involving the deep groundwater extraction wells and treatment system; Addendum #2 (dated April 15, 2016) regarding the management of stormwater with excavation areas created as part of the property re-development; and Addendum #3 (dated June 23, 2016) involving the sub-grade water conveyance piping from the extraction wells to the treatment building.

flow of water through the treatment components, bag filters for suspended solids removal, synthetic resin (AMBERSORB™ 560) for the removal of CVOCs and 1,4-dioxane, a metering pump for the addition of caustic soda for pH adjustment of the water, and two parallel in-line aerators to increase dissolved oxygen levels in the water. The treated water is discharged to the nearby stream, Stony Run, in accordance with the requirements specified in State Discharge Permit Number 15-DP-3442, which corresponds with National Pollutant Discharge Elimination System (NPDES) Permit MD 0069094, (the Permit) issued by the MDE. Samples of the treated effluent are collected monthly for the analysis of VOCs and other parameters (including 1,4-dioxane), in accordance with the Permit and RAP. The installation of the System was completed in February 2017, with continuous, full-scale operation beginning on March 10, 2017.

There are two synthetic resin vessels, identified as T-1100 and T-1200, which are arranged in series. They operate in a lead-lag configuration until the lead vessel reaches its adsorption capacity for the contaminants, which is based on the volume of water processed by the vessel. When the lead vessel has processed the pre-determined volume of water, the lag vessel is switched into the lead position, and the contaminant-loaded, former lead vessel is temporarily taken out of operation for regeneration. The loaded vessel is regenerated onsite using steam process equipment, including a boiler and steam superheater, to remove the adsorbed constituents from the resin. The steam containing the desorbed constituents is discharged to the atmosphere through the steam reheater. Once the regeneration process is completed, the regenerated vessel is returned to operation as the lag vessel, and the cycle is repeated. Condensate produced during the regeneration process combines with influent groundwater in the flow EQ tank for treatment through the System. Softened water used to quench (cool) and rinse the regenerated resin is also routed to the flow EQ tank to combine with groundwater for treatment.

1.4 RESPONSE ACTION OBJECTIVES

Since impacted groundwater poses the most significant risk to potential receptors, the goals for the corrective measures are focused on the affected groundwater in the LPA. The following Response Action Objectives (RAOs) with respect to groundwater were previously developed for the Site and continue to be used to gauge the performance and effectiveness of the corrective measures (WSP 2015a):

- controlling migration of groundwater with constituents of concern (COCs) exceeding applicable human health criteria beyond the Former Kop-Flex property boundary
- reducing concentrations of COCs in the aquifer system
- restricting groundwater use on the Site to prevent potential exposure to COCs present at concentrations above applicable human health criteria.

1.5 CLEANUP STANDARDS

The groundwater cleanup levels for the COCs detected in the groundwater are based on the MDE Cleanup Standards (Cleanup Standards) for Type I/II Aquifers, except as noted for 1,4-dioxane, and are listed in the table below. The cleanup criterion for 1,4-dioxane, which is not included in the MDE Cleanup Standards, was determined from an evaluation of calculated risk-based concentrations in groundwater. Based on this evaluation, a property-specific cleanup criterion of 15 micrograms per liter (µg/L) was established for 1,4-dioxane at the Site, whereas the action level for 1,4-dioxane in the offsite area is 4.6 µg/L.

Compound	Cleanup Standard (µg/L)
1,1,1-TCA	200
1,1-DCA	2.8[2]
1,1-DCE	7
1,2-DCA	5
Chloroethane	2,100[3]
TCE	5
cis-1,2-DCE	70
1,4-Dioxane	15

[2] The standard for 1,1-DCA reflects the current numerical criterion promulgated by MDE, which was updated in October 2018.

[3] The standard for chloroethane reflects the current numerical criterion promulgated by MDE, which was updated in October 2018.

2 SYSTEM OPERATION AND PERFORMANCE MONITORING

2.1 SYSTEM RUNTIME AND DOWNTIME

During the reporting period from January 1, 2022, through December 31, 2022, the System operated approximately 63% of the time. Some downtime was related to the completion of routine maintenance activities, such as changing bag filters, cleaning strainers, testing the high-sump alarm, or the replacement of System components, in accordance with WSP's OM&M Manual (WSP 2018). Additional non-routine System shutdowns associated with unexpected events and System maintenance occurred as described below.

- On February 21, 2022, the System was shut down to conduct a reset of the regeneration sequencing for the resin vessels. A regeneration reset is currently completed at least semi-annually to address early loading, or "pre-loading", of the lag vessel's resin due to an exceedance of resin adsorption capacity of the lead vessel. System flow was suspended to allow for the steam regeneration of both resin vessels to remove any Site-related VOCs and 1,4-dioxane from the media. The steam regeneration process for each vessel takes approximately 24 hours to complete and is routinely done with one vessel continuing to process contaminated water. "Resetting" the System by removing all COCs from the media in both vessels returns the System to the most optimal treatment capacity. The System was restarted on February 23, 2022, following completion of the regeneration reset.
- The System was manually shut down on March 14, 2022, to allow for replacement of the conductivity-based boiler blowdown assembly to ensure adequate blowdown for optimal boiler operation (Section 2.5.2). The System was restarted on March 16, 2022, following completion of the replacement installation.
- On April 29, 2022, the System was manually shut down following measured exceedances of the permitted pH range for the System's boiler blowdown water discharging to the sanitary sewer under the Wastewater Discharge Permit issued by the Anne Arundel County (County) Pre-treatment Program. The System was restarted on August 8, 2022, following the completion of System modifications to containerize and manage the boiler blowdown water (Section 2.3). The System experienced additional short (1- to 5-day) shutdowns during August to implement the System modifications for the boiler blowdown water management.
- On September 16, 2022, the System was manually shut down after the operator noted malfunctioning of the System in-line pH probe that controls operation of the caustic pump for pH adjustment. The System was restarted on September 21, 2022, following replacement of the pH probe and transmitter (Section 2.5.2). A spare pH probe sensor for the new pH probe model is now kept onsite to reduce potential future downtime.
- On December 7, 2022, the System was shut down to conduct a reset of the regeneration sequencing for the resin vessels, as described above. The System was restarted on December 9, 2022, following completion of the regeneration reset.

The prolonged (3+ month) shut-down period to determine an alternate method for managing the boiler blowdown water was the primary cause for the reduced System run-time efficiency during the 2022 calendar year.

Non-routine partial shutdown of the recovery wells occurred on several occasions during 2022. For the shallow recovery wells, the submersible pump installed in RW-1S ceased operation on March 5, 2022, due to significant iron build-up within the pump (Section 2.4). Groundwater pumping from RW-1S resumed on April 14, 2022, following replacement of the submersible pump and cleaning of the water line running from the pump to the well-head vault. In addition, the water level pressure transducer deployed in well RW-3S, which controls the operation of the variable frequency drive (VFD) for the submersible pump, experienced failure on September 1, 2022. (For each recovery well, the transducer needs to be functioning or the submersible pump will not operate.) Before initiating any repairs to the transducer, WSP will evaluate (1) the hydraulic response due to pumping from the remaining shallow recovery wells – RW-1S and RW-2S – and (2) the contaminant mass

recovery from RW-3S to assess this well's contribution on the overall performance of the shallow recovery well system.[4] There has been no operation of the submersible pump in RW-3S since failure of the pressure transducer.

Since 2020 there has been a recurring problem associated with the operation of deep recovery well RW-1D that does not affect the operation of the other recovery wells or function of the other System components; the System continues to extract and treat groundwater from the shallow recovery wells and RW-2D while RW-1D is non-operational. The VFD that controls the submersible pump installed in RW-1D occasionally experiences a fault following the completion of a System regeneration, causing the RW-1D pump to cease operation temporarily, requiring manual reset of the VFD by an operator onsite. Initially, the problem occurred a few times during 2020 and 2021, but had ceased following a hard reset of the electrical panel on which the RW-1D VFD is mounted in early September 2021. The RW-1D VFD fault recurred at various times during 2022, particularly from late August through early December; however, there have been no significant recurrences since the VFD was serviced in January 2023.

When fully operational, the groundwater withdrawal rate for the System ranged from approximately 65 gallons per minute (GPM) to 72 GPM, with an average rate of 68 GPM during the reporting period. The design flow rate for the System was approximately 80 GPM (WSP 2015a). Based on the System effluent totalizer, approximately 21.8 million gallons of groundwater was treated and discharged to Stony Run from January 1, 2022, through December 31, 2022. Additional information on the groundwater extraction rates for the shallow and deep recovery wells is provided in Section 2.2.4.

2.2 OPERATIONAL AND PROCESS MONITORING DATA

2.2.1 OVERVIEW OF TREATMENT SYSTEM OPERATION

During System operation, water samples were regularly collected for chemical analysis to monitor and evaluate VOC and 1,4-dioxane concentrations in the System influent (Table 1) and effluent (Tables 2 and 3). Total COC concentrations (VOCs + 1,4-dioxane) for the System influent were generally consistent during the reporting period, with the highest System influent concentration (480 µg/L) detected in the sample collected during September 2022, and the lowest concentration (279 µg/L) detected in the sample collected during June 2022 (Figure 2). The low June 2022 influent concentrations are potentially the result of short-term reduced capture of COCs while the System was non-operational between April 29 and August 8 (Section 2.3), allowing diffusion of COCs from low permeability to high permeability zones. This would also result in higher influent concentrations in the September and November 2022 samples once continuous System operation and groundwater capture was restored.

Analysis of the treated water (i.e., effluent) indicated non-detect concentrations of VOCs and non-detect to low levels of 1,4-dioxane. The detectable concentrations of 1,4-dioxane ranged from 1.0 µg/L to 6.6 µg/L (Table 3). There were no exceedances of the Site-specific 1,4-dioxane cleanup level of 15 µg/L in the treated effluent.

In addition to VOCs and 1,4-dioxane, effluent samples were collected for the analysis of other parameters, in accordance with the Permit. The analytical results for all samples indicate compliance with the effluent limitations specified in the Permit (Table 2).

Based on the findings from an inspection completed by MDE in February 2022 (Section 2.2.3), MDE recommended conducting periodic analysis of the effluent for total residual chlorine (TRC), with immediate notification to MDE if a concentration of > 0.1 milligrams per liter (mg/L) is detected in the discharge. WSP began regularly monitoring TRC concentrations in the System effluent discharge during February 2022 (Table 4). TRC is measured in the field with a digital

[4] WSP completed the evaluation of well RW-3S in April 2023. The results of this assessment indicated the temporary cessation of groundwater pumping from RW-3S would not negatively affect the continued hydraulic containment of the shallow contaminant plume or result in a significant decrease in the contaminant mass recovery from the shallow LPA zone. In the Quarterly Corrective Measures Progress Report No. 26 (dated June 2, 2023), EMERSUB 16 and WSP proposed to temporarily shut-down pumping from RW-3S to allow for further assessment and rehabilitation of this recovery well. In conjunction with the well assessment and rehabilitation, the water level transducer would be repaired or replaced in the event well RW-3S is brought back on-line.

colorimeter at the time of sample collection. TRC monitoring results are provided to MDE in the monthly Discharge Monitoring Reports. All TRC monitoring results during 2022 were equal to or less than the 0.1 mg/L notification level.

2.2.2 TREATMENT SYSTEM MONITORING AND PERFORMANCE

The System treatment equipment performance was monitored by collecting and analyzing influent and effluent water samples from in-line sample ports located at the treatment building. The System effluent samples also fulfilled the monitoring requirements specified in the Permit. The samples were analyzed for VOCs using either EPA SW-846 Test Method 8260D (influent samples) or EPA Method 624.1 (effluent samples) and 1,4-dioxane using modified EPA SW-846 Test Method 8260B with Selected Ion Monitoring (SIM). Lab analysis was conducted by the Phase Separation Science, Inc. laboratory located in Catonsville, Maryland.

The historical VOC and 1,4-dioxane results for the System influent and effluent samples are summarized in Tables 1, 2, and 3. Certified laboratory analytical reports for the January 2022 through December 2022 influent and effluent samples are included in Appendix A. Influent VOC and 1,4-dioxane results were compared to the Cleanup Standards, as stated in Section 1.4 of this document. Based on the analytical results, 1,1-DCA, 1,1-DCE, and 1,4-dioxane were the only constituents detected above their respective Cleanup Standard in the influent samples. Other CVOCs detected in the System influent, albeit not above the Cleanup Standards, included 1,1,1-TCA, 1,2-DCA, chloroethane, TCE, and *cis*-1,2-DCE. For the non-exceeding COCs, 1,1,1-TCA and chloroethane, which is another degradation product of 1,1,1-TCA, were detected at the highest concentrations in the influent samples, with the chlorinated ethenes TCE and *cis*-1,2-DCE, and 1,2-DCA present at very low concentrations (< 2 µg/L). The total VOC concentrations in the influent ranged from 193 µg/L (June 2022) to 330 µg/L (September 2022). The 1,4-dioxane concentrations in the influent ranged from 86 µg/L (June 2022) to 150 µg/L (September 2022).

Figure 2 plots the historical concentrations of total VOCs and 1,4-dioxane in the System influent from start-up (March 2017) through the end of 2022. This plot shows a generally decreasing trend for influent concentrations during the initial 6 months of operation, followed by a slight increase in concentrations from late 2017 through the first half of 2018. Total VOC concentrations have gradually decreased since the fourth quarter of 2018, but the rate of change generally slows each year (*i.e.*, concentrations appear to be reaching relatively stable levels). Based on the System supplier's modeling of measured influent concentrations, the corresponding resin loading rate should require two regenerations per week. However, the regeneration frequency was increased to three times per week in April 2019 based on increasing detections of 1,4-dioxane in the System effluent and has remained at that rate through this reporting period.

No VOCs were detected above the method reporting limits in the effluent samples collected during 2022. Based on these sampling results, the VOC removal efficiency during the reporting period was 100%. The 1,4-dioxane concentrations in the effluent water samples ranged from below the method reporting limit of 1.0 µg/L (four samples) to 6.6 µg/L (December 2022). Based on the sampling results, the removal efficiency for 1,4-dioxane was approximately 98.6% during 2022, which approaches values for the initial years of System operation.[5] Based on sampling results for the previous years, removal efficiencies for 1,4-dioxane during 2017, 2018, 2019, 2020, and 2021 were calculated at 100%, 99.5%, 93.3%, 95.8%, and 98.1% respectively.

During the 2022 reporting period, the System removed an estimated 52.6 pounds (lbs.) of the primary CVOCs: 1,1-DCE, 1,1-DCA, and 1,1,1-TCA, and 20.4 lbs. of 1,4-dioxane (Table 5). Figure 3 plots the historical mass removal of the primary CVOCs and 1,4-dioxane by the System from start-up (March 2017) through December 2022. As shown in this plot, total (*i.e.*, cumulative) mass removal of the primary COCs has exhibited a consistent increasing trend since System start-up, as expected. While annual COC mass removal has decreased each year from a historical high of 152.4 lbs. in 2018, the removal during 2022 (73.0 lbs.) was slightly higher than during 2021 (65.5 lbs.) (Table 5). Lower System runtimes in 2020, 2021, and 2022 (77%, 62%, and 63%, respectively) as compared to previous years (greater than 90%) are a major contributing factor to this reduction in contaminant removal. This reduction may also reflect a decrease in the mass present within the aquifer; as stated previously, historical concentrations of total CVOCs and 1,4-dioxane in the System influent have gradually decreased since System start-up (Figure 2).

[5] Based on the characteristics of the 1,4-dioxane breakthrough curve, the effluent concentration represents a maximum concentration for that sampling period and not the average concentration for the monitoring period. As a result, actual removal efficiency is presumed to be greater than 98.6%.

2.2.3 MDE COMPLIANCE INSPECTION

The MDE Water and Science Administration conducted an inspection of the System on February 9, 2022, which focused on evaluating compliance with the requirements in the NPDES Permit for the System. The inspection findings were communicated to WSP in an inspection report dated February 18, 2022. The inspection report noted a few violations related to the reporting of information in a small number of monthly Discharge Monitoring Reports. In addition, the report documented a few other findings, the most significant of which was the omission of information regarding the inclusion of very small, intermittent amounts of potable water with the extracted groundwater in the application for the existing NPDES Permit. The potable water consists of (1) condensate from the steam regeneration process and (2) softened water used to quench (cool) and rinse the treatment resin following regeneration. Both potable water streams are added to the flow EQ tank with the influent groundwater for treatment through the System, as described in Section 1.3.

WSP addressed the reporting violations and provided responses to all findings in a letter to MDE dated March 11, 2022. Information concerning the generation and chemistry of the regeneration-related potable process waters was also provided in this response letter.

Based on follow-up discussions, MDE determined the combined groundwater + potable water discharge from the System could be handled under the existing Permit. MDE indicated that information regarding the inclusion of the regeneration-related potable water to the extracted groundwater will be included in the renewal Permit and supporting documentation, and that TRC may be included in the effluent monitoring parameters moving forward. In addition, MDE recommended conducting periodic analysis of the effluent for TRC; WSP began regularly monitoring TRC concentrations in the System effluent discharge during February 2022 (Section 2.2.1).

2.2.4 RECOVERY WELL GROUNDWATER EXTRACTION AND MASS REMOVAL

GROUNDWATER PUMPING RATES

The monthly average extraction rates and total volume withdrawn for each recovery well are provided in Table 6 and Table 7, respectively. Data for each recovery well is collected weekly by the certified System operator from a flowmeter located at each wellhead. Higher extraction rates, averaging around 30 GPM, were set at each of the deep recovery wells compared to the shallow recovery wells, which averaged around 2 to 5 GPM, to ensure capture of the southward migrating plume in the deep zone of the aquifer. For the shallow recovery wells, a higher extraction rate was set at RW-1S (as compared to RW-2S and RW-3S) for much of 2022 because of the historically higher COC levels in the extracted groundwater at this location (Figure 4). Following rehabilitation of the recovery wells in late June, which significantly improved the specific capacity of wells RW-1S and RW-2S (Section 2.4), a higher extraction rate was able to be established in RW-2S. RW-2S has exhibited an increasing trend in COC concentrations over the last few years, with 2022 concentrations similar to those at RW-1S (Figure 4). The average combined flow rate determined from the summation of the individual recovery well extraction rates (Table 6) include data from nonoperational and partially operational days. Given this method of determination, most of the recovery wells saw a significant decrease in average annual extraction rate during 2022 due to the multiple shutdowns of the System described in Section 2.1, most notably the extended shutdown from April 29 through August 8 (Section 2.3).

MASS REMOVAL AT GROUNDWATER EXTRACTION POINTS

WELL DISCHARGE SAMPLING

In accordance with the Groundwater Monitoring Plan (WSP 2015b), water samples were collected from the shallow and deep recovery wells during the weeks of June 26, 2022, and November 20, 2022. As the System was non-operational at the time of the June 2022 sampling event, the System was temporarily restarted, and all extraction wells were operated for approximately 3 hours prior to recovery well sample collection on June 26. The sampling data is used to assess contaminant mass recovery at the individual groundwater extraction points in the shallow and deep portions of the aquifer. Groundwater discharge from each recovery well was collected via sampling ports located in the well head piping. The valve for the sampling port was opened to deliver a low flow stream of water to fill the sample bottles. Initially, a small amount of water was purged from the sampling port and collected in a 5-gallon bucket. A groundwater sample was then collected for laboratory analysis of VOCs by EPA SW-846 Test Method 8260D and 1,4-dioxane using modified EPA SW-846 Test Method 8270E SIM by the ALS

Environmental laboratory in Middletown, Pennsylvania. The purge water generated from the recovery well sampling was processed through the System.

SAMPLE RESULTS

The June and November 2022 recovery well analytical results are presented in Table 8, and historical sampling data is presented in Table 9. Results for the 2022 recovery well samples are included in Figure 5. Figure 4 shows the trends in total VOC and 1,4-dioxane concentrations for each well and its average pumping rate. During 2022, the total VOC concentrations have remained generally consistent in most wells except for an elevated June 2022 concentration at RW-2S and a slightly increasing concentration trend at RW-3S. Levels of 1,4-dioxane consistently decreased in the discharge of RW-1S, RW-3S, RW-1D, and RW-2D during the 2022 reporting period. Since startup, VOC and 1,4-dioxane concentrations at RW-1S, RW-2S and RW-2D have decreased, although concentrations at all recovery wells have remained relatively stable since 2018. As mentioned above, RW-1S and RW-2S have similar total VOC and 1,4-dioxane concentrations, and therefore similar pumping rates; RW-3S has significantly lower concentrations of COCs, and therefore a lower pumping rate when operational. Concentrations of VOCs and 1,4-dioxane between RW-1D and RW-2D are also fairly similar, and therefore the well pumps are set at similar pumping rates.

2.3 BOILER BLOWDOWN WATER MANAGEMENT

The System includes a small boiler, which is used to generate steam for the onsite regeneration of the treatment resin. Blowdown water from the boiler is primarily generated during the regeneration of the treatment resin, which occurs three (3) days per week during normal System operation. Following a measured pH of 10.76 standard units (SU) for the blowdown on November 3, 2021, exceeding the upper limit (10 SU) in the County Wastewater Discharge Permit, WSP completed a small-scale pH study of the boiler blowdown water at the request of the County Pre-treatment Program. (The automatic conductivity-based surface blowdown assembly for the boiler was replaced prior to initiation of the pH study (see Section 2.5.2 below). The boiler blowdown pH study was initiated on March 21, 2022, and completed on April 8, 2022. The study involved conducting field pH measurements of blowdown water from both the surface (automated) and bottom (manual) discharge locations using a calibrated field instrument during each regeneration event.

The pH of the blowdown water from the boiler during the study ranged from 10.41 SU to 11.11 SU, with an average pH of 10.81 SU. Based on the study results, the County Pre-treatment Program denied EMERSUB 16's request for a variance to the upper pH limit in the Wastewater Discharge Permit in a May 23, 2022, email to WSP. Based on this regulatory determination, WSP temporarily shut down the operation of the System on April 29, 2022, until implementation of an alternate method for managing the boiler blowdown water. The System remained nonoperational until August 8, 2022, when modifications to the System for interim management of the boiler blowdown discharge were completed. These modifications involved rerouting the blowdown water to an onsite frac tank for subsequent pH adjustment with hydrochloric acid and discharge of the neutralized water to the sanitary sewer system in accordance with the County Wastewater Discharge Permit. There were a few short-term (1 to 5-day) shutdowns in August during the start-up of the System modifications for managing the boiler blowdown water.

The long-term approach for management of the boiler blowdown discharge will involve the routing of this water to the flow EQ tank and treatment through the System. For implementation of this permanent solution, Addendum #2 to the NPDES Permit renewal application was submitted to MDE on August 5, 2022. This addendum and additional supporting documentation provide information for the planned addition of the boiler blowdown to the process water flow and routing of the combined water through the System with eventual discharge to Stony Run.

2.4 RECOVERY WELL ASSESSMENT AND REHABILITATION

On March 7, 2022, the System OM&M operator discovered there was no water discharge from shallow recovery well RW-1S even though the System controls indicated the submersible pump was running. When the pump and water conveyance line were removed from the well on March 16th, reddish-colored deposits indicative of iron-containing minerals/precipitates were noted at the water intake screen and other parts of the pump housing. The observed condition of the pump suggested the possible occurrence of iron fouling within this recovery well, which can occur during the normal operation of wells used for groundwater extraction. Due to significant iron build-up within the pump internals, the submersible pump was replaced on

April 14, 2022. Additionally, WSP developed a plan to assess all groundwater recovery wells for possible iron fouling or other impacts that could affect their performance.

WSP retained Parratt-Wolff, Inc. to assist with the recovery well assessment and rehabilitation. Yield testing of each of the System recovery wells was conducted June 28-29, 2022, to gather updated information on the specific capacity, or well discharge per foot of drawdown. Based on comparison to their initial (2016) condition, the testing indicated a significant (greater than 50%) reduction in specific capacity of each of the shallow recovery wells (Table 10). There was no reduction in the specific capacity of the deep recovery wells. After completing the yield testing activities, the submersible pumps and connected water conveyance hoses and pressure transducers were removed from each of the recovery wells in advance of further assessment and rehabilitation activities.

A down-well camera survey was conducted at each recovery well to assess the condition of the well casing and screen. Real-time camera output for the shallow recovery wells indicated the existence of biological build-up on the well screens and apparent iron-containing solids at the bottom of each well. The presence of similar deposits was much less severe in the deep recovery wells, with some minor biological build-up on the screens. The camera surveys also revealed the remnants of galvanized steel cable in some of the wells, which appeared to be undergoing chemical degradation inside the well casing. Galvanized steel cable was used to secure the submersible pump in each recovery well during the System installation activities in early 2017. The corroded cables in shallow recovery wells RW-1S and RW-2S were removed prior to conducting well rehabilitation activities.

Chemical rehabilitation of the shallow recovery wells to address the biofouling impacts and redevelopment of all recovery wells was completed during early July 2022. First, air lifting, which involves injecting compressed air to 'lift" water out of a well, was used to remove the solids from the well casing and sand pack at each recovery well. Following air lifting, chemical treatment to break down the biofouling deposits in the well casing and screen was applied at each of the three shallow recovery wells. The chemical products selected for the rehabilitation consisted of a bio-dispersant (Nu-Well 310 Dispersant) combined with a liquid acid (Nu-Well 120 Descale Safe), both of which are manufactured by Johnson Screens and suitable for use on potable water wells. Based on the length of the water column determined from the well construction information and water level measurements during the recent yield testing, approximately 2 gallons of the Nu-Well 120 Descale Safe and 1 gallon of the Nu-Well 310 Dispersant were carefully added to each shallow recovery well and allowed to remain in each well overnight. After the treatment period, each of the shallow wells was redeveloped by surging for a minimum of 1 hour using a suitably sized surge block attached to drill rig tooling. A surge block was selected for the shallow recovery wells as they required additional development and removal of solids around the well screen and surrounding sand filter pack to improve yield. The deep recovery wells showed minimal fouling; thus, a wire brush was selected for removal of the solid material from the screen. While a wire brush attached to the drill rig tooling was used for surging the screen in RW-1D, a surge block was used instead of a wire brush for RW-2D because the brush was getting caught in the well casing. A second round of air lifting was completed at each recovery well following the surging or wire-brushing activities. During this round of air lifting, the pH of the shallow recovery well purge water was monitored to ensure the removal of all water containing the acid-based treatment chemicals. The surging and brushing activities also allowed for the removal of the corroded security cable from recovery wells RW-3S and RW-1D. However, the removal of all remnants of the security cable from RW-2D was not feasible due to the same down-well obstruction that prevented use of the wire brush during the surging phase.

During the inspection and rehabilitation activities, the OM&M contractor performed cleaning of the pumps and associated water conveyance lines and pressure transducers in all recovery wells to remove accumulated iron and biological deposits. The cleaning procedure involved scrubbing the outside of the components with cleaning solution followed by a potable/tap water rinse prior to redeployment in the recovery wells.

After completing the rehabilitation activities, another round of yield tests was conducted for the shallow recovery wells to determine the degree of improvement. The test results indicated a significant increase in specific capacity at wells RW-1S and RW-2S, with values consistent with data from the baseline tests conducted following the installation of the wells in the fall of 2016 (Table 10). Yield test results for RW-3S did not show any noticeable improvement in the post-rehabilitation specific capacity. WSP's belief is that the reduced performance of RW-3S is due to clogging of the sand filter pack and/or borehole wall by clayey sediments. WSP plans to conduct further testing and evaluation of this well to identify and attempt to ameliorate the cause of the reduced specific capacity.

2.5 SYSTEM MAINTENANCE

2.5.1 ROUTINE MAINTENANCE ACTIVITIES

During the 2022 reporting period, WSP subcontracted the weekly OM&M of the System to a local contractor, S&S Technologies, Inc. of Elkton, Maryland. Subcontractor oversight was provided by WSP engineer Ms. Shannon Burke, working under the direction of Mr. Steve Kretschman, P.E., the engineer of record for the System. OM&M activities were conducted in accordance with the current version of the OM&M Manual, dated May 2018.

Routine OM&M activities performed during the reporting period included the following weekly tasks:

- regeneration of the resin
- replacement of bag filters
- cleaning of the resin vessel wye strainers
- cleaning and recalibration of the inline pH probe
- recording instrumentation readings (flow, pressure, temperature)
- system-wide leak inspections
- steam boiler system inspections and testing

Several System components require routine replacement every few years. The following routine replacements were completed during 2022:

- replacement of the air compressor on March 9, 2022 (previously replaced March 2019)
- replacement of the compressed air filter/regulator on October 21, 2022 (previously replaced June 2021)

In conjunction with the inspection and testing of the boiler system, a local water treatment contractor (Chem-Aqua, Inc.) completed monthly checks of the boiler water chemistry. Quarterly mechanical inspections and maintenance of the steam boiler components were also performed by another local contractor (Tate Engineering Systems, Inc.).

In addition to the routine tasks, annual OM&M activities were performed on May 25, 2022, and included the following:

- cleaning and inspection of well vaults and piping tee-boxes
- system-wide manual exercising of ball valves
- system-wide wye strainer removal and cleaning

Based on the annual inspection findings, it was determined there are no leaks for any of the System components and cleaning of the inside of the flow EQ tank was not necessary. The EQ tank will be opened for inspection during 2023.

2.5.2 NON-ROUTINE MAINTENANCE ACTIVITIES

CAUSTIC PUMP MOTOR

On February 2, 2022, the System operator discovered lubricant leaking from the caustic pump motor shaft seal. The operator temporarily shut down System flow to enable replacement of the damaged caustic pump motor with the motor from the spare sequestrant pump, which had been used for only a few months during the initial System start-up in 2017. The sequestrant pump is the same model as the caustic pump, so the parts are interchangeable. The damaged caustic pump motor will either be serviced, or a replacement motor will be ordered to be kept onsite as a spare to prevent potential future downtime.

CONDUCTIVITY-BASED BOILER BLOWDOWN ASSEMBLY

Historical conductivity measurements of water sampled from the boiler were consistently above the recommended conductivity operating range. It was determined that the reason for the elevated conductivity was a poorly placed conductivity sensor and inadequately sized blowdown piping. Based on these observations, it was determined that

replacement of the conductivity-based automatic surface blowdown assembly for the boiler was necessary to ensure optimal boiler function. As there is some correlation between the boiler blowdown conductivity and pH, replacement of the assembly was completed prior to initiation of the blowdown pH study described in Section 2.3. The installation, testing, and start-up of the new blowdown assembly was completed on March 18, 2022.

PH ADJUSTMENT SYSTEM

On September 16, 2022, the System operator noted malfunctioning of the System in-line pH probe that controls operation of the caustic pump for pH adjustment, with the probe transmitting erratic pH readings (Section 2.1). The lead time for a new unit of the original probe was estimated at 12-14 months. Based on this unusually long lead time, an alternate model pH probe used by WSP at a similar site was identified as a replacement. Installation of the new pH probe model also necessitated installation of a new corresponding transmitter. The new pH probe and transmitter were installed on September 21, 2022. The new model represents a significantly improved design with quick-connect fittings for ease of probe sensor maintenance and replacement.

2.6 WASTE MANAGEMENT

2.6.1 ROUTINE MAINTENANCE ACTIVITIES

Bag filters for the removal of suspended solids from the System influent were regularly changed out with new bag filters. The frequency of bag filter replacement increased from monthly to weekly in late 2020. Following rehabilitation of the recovery wells during summer 2022, the frequency of bag filter replacement has decreased to monthly or semimonthly. Spent bag filters were managed offsite as non-hazardous waste (general trash). Disposable materials from the groundwater and System sampling activities (e.g., gloves) were also managed offsite as non-hazardous waste. Remedial activities at the Site are conducted by EMERSUB 16 as a very small quantity generator (VSQG) of hazardous waste, per EPA classification, and a small quantity generator (SQG) of hazardous waste, per MDE classification. No hazardous waste was generated at the Site during 2022.

2.6.2 RECOVERY WELL REHABILITATION

Water generated from the initial air lifting of the shallow and deep recovery wells during the rehabilitation activities was pumped through a bag filter and into the flow EQ tank for treatment through the System. Redevelopment water generated from air lifting the shallow wells after the chemical addition and surging was neutralized using soda ash and placed in twelve (12) 55-gallon steel drums for subsequent characterization and management at an offsite disposal facility. A representative sample of this wastewater was collected and submitted to the ALS Environmental laboratory in Middletown, Pennsylvania for analysis of Total Resource Conservation and Recovery Act (RCRA) metals using EPA SW-846 Test Method 6010D for arsenic, barium, cadmium, chromium. lead, selenium, and silver, and Method 7470A for mercury. In addition, WSP measured the pH of the wastewater using a calibrated field meter at the time of sample collection. The wastewater was profiled and disposed offsite as non-hazardous waste in accordance with applicable state and federal regulations. (Documents pertaining to the offsite disposal of the recovery well rehabilitation purge water are provided in Appendix B.)

3 GROUNDWATER MONITORING

3.1 GROUNDWATER MONITORING ACTIVITIES

A total of 21 monitoring wells have been installed to collect groundwater levels and groundwater quality samples at the Site (Figure 6). Details regarding well construction are provided in Table 11. All monitoring wells, along with the co-located piezometers for the recovery wells, were utilized in the groundwater level monitoring program. Groundwater samples were collected from select monitoring wells as part of the monitoring program for the corrective measures.

3.1.1 REPLACEMENT OF MONITORING WELL MW-04

INSTALLATION OF REPLACEMENT WELL MW-04R

Site owner Catalent has prepared a design for a multi-level parking garage to be constructed in the eastern portion of the Site. Consequently, shallow monitoring well MW-04 would no longer be usable for future monitoring activities. An agreement was reached between EMERSUB 16 and Catalent to install a new monitoring well to replace the MW-04 well. This replacement well, designated MW-04R, would be installed approximately 70 feet northeast of existing well MW-04, and east of the small stormwater management area, as approved by MDE on August 26, 2022.

Replacement well MW-04R was installed at the approved location during the week of September 12, 2022. The well borehole was completed at a depth of approximately 40 feet below ground surface using the hollow stem auger drilling method. Given the difference in elevation, the borehole depth is slightly deeper than the bottom of well MW-04. During borehole advancement, descriptive information for the aquifer material recovered in the soil core samples, along with photoionization detector readings and moisture conditions for the material, were recorded by the WSP onsite hydrogeologist. A boring log of the material descriptions and other field information is provided in Appendix C.

The replacement well was constructed with 10 feet of 2-inch inner diameter, Schedule 40 polyvinyl chloride (PVC) 0.020-inch machine slotted screen with the appropriate length of PVC riser. A clean sand filter pack was placed in the annular space from the bottom of the well to 2 feet above the top of the screen. A 2.5-foot-thick bentonite chip seal was then placed above the sand filter pack. The remaining annular space was backfilled to approximately 1-foot below grade with a bentonite and cement grout slurry mixture. The top of the well was completed just below the surrounding ground surface and set within a flush-grade protective steel cover set in a concrete pad. The top of the monitoring well was fitted with a lockable watertight cap. Well construction information was recorded in the field logbook. An as-built diagram was prepared after completion of the field activities and is included with the boring log in Appendix C.

The replacement well was developed to remove sediments from the sand pack and aquifer material immediately surrounding the borehole and ensure effective hydraulic communication between the screened interval and saturated zone. The development process involved the combined surging of the well screen and pumping of groundwater from the well using a small, electric submersible pump. Well development documentation, including the development method, time spent on development, and hydrogeochemical parameters (turbidity, pH, conductivity, and temperature) of the discharge water, were recorded in the field book. The water level in the well was also periodically checked during pumping to assess changes in the well condition. Upon completion of the development activities, the well water was generally clear with low turbidity readings, and the pH and conductivity had stabilized at values similar to groundwater from other onsite wells indicating fresh groundwater was entering the well.

After completing the well installation activities, the location and elevation of the replacement well were determined by a Maryland-licensed surveyor. The surveyed elevation for the top of well MW-04R is provided in Table 11.

ABANDONMENT OF WELL MW-04

In conjunction with the replacement well installation, existing well MW-04 was abandoned in accordance with the methods and procedures specified in the Maryland well construction regulations. Since this well is part of the groundwater monitoring network for the shallow zone, the previous deployed HydraSleeve sampler was first removed from the well, and then the

depth to water and well depth were gauged using an electronic water level indicator. After checking the well, the concrete pad and flush-grade protective cover were removed, and the well casing was cut to approximately 0.5 feet below existing grade. The well casing was then backfilled using a bentonite-cement grout, emplaced from the bottom to the surface using a tremie pipe. After plugging the well, the area was backfilled with clean soil and a layer of asphalt patch to match the existing grade. A completed Water Well Abandonment Sealing Report was prepared for the well and submitted to the MDE in accordance with the well regulations.

3.1.2 GROUNDWATER LEVELS

In June 2022, groundwater level measurements were collected from all monitoring wells except MW-42, and MW-16D, which were inaccessible. No groundwater level measurements were collected from the recovery well piezometers because the System was down during this gauging event.

Synoptic rounds of water level data were collected at two different times during the month of November. Water level measurements from most of the shallow monitoring wells and recovery well piezometers were collected on November 7, 2022, to assess the water level response to remedial pumping with recovery well RW-3S off-line (see Section 2.1). Later that month, water level data was collected from all monitoring wells and recovery well piezometers, except MW-16D, which was inaccessible, on November 20, 2022, as part of the semi-annual groundwater monitoring event at the Site.

The depth to groundwater (to the nearest 0.01 foot) was measured from the reference point on the monitoring well or piezometer casing using an electronic water level meter. The water level data gathered during the 2022 gauging events are provided in Table 12.

3.1.3 GROUNDWATER SAMPLES

SAMPLING PLAN

In accordance with the Groundwater Monitoring Plan (WSP 2015b), groundwater quality samples were collected from the onsite monitoring wells during the week of June 26, and July 15, 2022, for the annual sampling event. The selected monitoring wells included 13 shallow zone monitoring wells (MW-01, MW-03, MW-04, MW-05R, MW-09, MW-16, MW-18, MW-20, MW-38R, MW-39, MW-42, MW-43, and MW-44) and 8 deep zone wells (MW-1D, MW-16D, MW-21D, MW-22D, MW-23D, MW-27D, MW-40D, and MW-41D).

The semiannual groundwater sampling event was conducted on November 20, 2022. The semiannual event included the same wells as the annual event with the exception that the newly installed replacement monitoring well MW-04R took the place of MW-04, which was abandoned.

MONITORING WELL SAMPLING PROCEDURE

Groundwater samples were collected from the monitoring wells using HydraSleeve samplers. A single, 2-foot long HydraSleeve sampler was attached to a weighted nylon line and set in each well to collect a sample in the middle of each well screen. The nylon line was secured at the well head to ensure the sampler remained at the selected deployment depth. During the sampling activities, the pre-deployed and equilibrated HydraSleeve sampler was removed from the well, and the collected water transferred to the appropriate containers for laboratory analysis. After sample collection, any remaining water was used to measure field parameters (pH, conductivity, turbidity, and temperature) via a multi-parameter water quality meter. Field parameter data was not obtained if there was insufficient water following sample collection. After collecting the sample from the well, a new HydraSleeve sampler was then deployed for the next sampling event. Excess water generated from the monitoring well sampling activities was containerized and processed through the System. The collected monitoring well samples were analyzed for VOCs using EPA SW-846 Test Method 8260D 1,4-dioxane using EPA SW-846 Test Method 8270E SIM by the ALS Environmental laboratory in Middletown, Pennsylvania.

3.2 GROUNDWATER MONITORING RESULTS AND EVALUATION

3.2.1 GROUNDWATER LEVELS

Groundwater level monitoring is conducted to gather data to evaluate the groundwater flow direction and the hydraulic response to remedial pumping in both the shallow and deeper zones of the LPA. Current and historical monitoring well and piezometer depth to water measurements and calculated groundwater elevations are provided in Table 12. Water level contour maps depicting the water table and hydraulic head conditions in the sandy deposits in the shallow zone of the LPA and the deep zone of the LPA are provided in Figures 6, 7, and 8 for the June 2022 monitoring event, and Figures 9, 10, and 11 for November 2022. As discussed in Section 2.1, the System was manually shut down between April 29 and August 8, 2022, to develop and implement modifications for the management of the high pH boiler blowdown water discharge. This shut-down period encompasses the June 2022 measurement event where the data are indicative of non-pumping conditions.

GROUNDWATER SURFACE

The water table contour maps (Figures 6 and 9) indicate a generally west-northwest groundwater flow direction in the upper-most portion of the shallow zone of the LPA during both monitoring events in 2022. The November 2022 contour map depicts a localized depression in the groundwater surface around well MW-38R related to groundwater pumping from recovery wells RW-1S and RW-2S immediately to the east. This hydraulic sink is not present in the June 2022 data when the System was not operating for most of late spring and summer. A slight mounding effect is observed in both sets of data around MW-04 and MW-09, most likely reflecting enhanced recharge to the groundwater system associated with the stormwater management area in the east-central portion of the Site.

LOWER PORTION OF SHALLOW ZONE

In June 2022, higher groundwater elevations were limited to the pumping wells as compared to levels under remedial pumping conditions in November 2022 due to the lack of groundwater withdrawals from the aquifer. However, water levels in wells outside of the cone of depression were higher in November, indicating an increase in the overall static water table between the two monitoring events. The cessation of remedial pumping in late April through early August 2022 resulted in the disappearance of the pronounced head changes, or cone of depression, typically observed within the permeable sand deposits comprising the lower portion of the shallow zone in the eastern portion of the Site (Figure 7). In the absence of remedial pumping, groundwater flowed in a generally northwestward direction toward Stony Run. However, a slightly higher water level elevation at well MW-16 suggested the movement of groundwater in a more northerly direction in the southeast portion of the Site. This flow direction may have reflected a transient condition within the shallow zone of the aquifer associated with recent construction activities in this area of the Site.

In contrast to the June 2022 results, pronounced drawdown was observed in the vicinity of the shallow recovery wells during the November 2022 monitoring event (Figure 10). In this area, a well-developed cone of depression exists near RW-2S and extends to the north toward wells MW-39 and MW-43, and south towards MW-44. Based on the spatial head variations, groundwater in the upper portion of the shallow zone will tend to migrate downward through the clayey deposits in the western portion of the Site and serve as inflow to the shallow recovery well system.

DEEPER ZONE

The potentiometric surface contour maps for the deep zone of the LPA generated from the June and November 2022 water level data are provided in Figures 8 and 11, respectively.

Figure 8 depicts the potentiometric surface based on the June 2022 water level measurements at the onsite deep wells and offsite wells MW-24D on the William-Scotsman property to the south and MW-46D on the Verizon property to the north. As with the shallow zone, the June 2022 data reflect the recovery of the hydraulic heads to a non-pumping condition following shutdown of the System at the end of April 2022. The hydraulic head contours generated from the data demonstrate south to south-southeast flow pathways for groundwater in this deep zone. The southward groundwater flow direction is consistent with other potentiometric surface contour maps developed from water level data collected under non-remedial pumping conditions.

The head distribution from November 2022 indicates the southward movement of groundwater across the Site, with the development of an elongated depression in the potentiometric surface along the entire southern property boundary in response to groundwater withdrawals from the deep recovery wells (Figure 11). The eastern-most portion of this hydraulic sink, as depicted by the head contours, indicates greater drawdown in the area around recovery well RW-2D, which is consistent with potentiometric surface maps from previous monitoring rounds. Evaluation of the head distribution indicates drawdown of the potentiometric surface extending south onto the adjoining Williams Scotsman property towards monitoring well MW-24D. Additionally, comparison of the groundwater elevations in monitoring wells MW-01D, MW-21D, and MW-41D indicate an upward component of flow from the lower-most portion of the sand deposits comprising this zone toward the depth interval screened by the recovery wells. Monitoring well MW-41D, which is screened in the lower-most portion of the deep zone, has a higher groundwater elevation compared to wells MW-01D and MW-21D. This indicates an upward component of groundwater flow from the lower portion of the confined sand unit to MW-01D and MW-21D, which are located next to recovery wells RW-2D and RW-1D, respectively.

TEMPORAL CHANGES IN GROUNDWATER LEVELS

Figures 12 and 13 depict hydrographs of select monitoring wells located outside of the interpolated cone of depression in the shallow unconfined zone and the deeper confined zone of the LPA, respectively. Hydrographs from the shallow zone distinguish themselves as several distinct hydrostatic levels: a shallow grouping comprised of upgradient wells MW-01, MW-09, and MW-20, with average heads ranging between approximately 113 and 116 feet above mean sea level (amsl); an intermediate grouping of wells closer to the center of the Site (MW-16 and MW-44) with heads between approximately 110 and 112 feet amsl; and a deeper grouping located downgradient (MW-03 and MW-42) with water levels ranging between approximately 106 and 108 feet amsl. The water level collected from MW-20 on June 26, 2022, is an outlier and potential transcription error and was omitted from the June 2022 elevation contouring (Figure 6).

The highest heads are primarily measured in upgradient wells screened in the shallowest portion of the LPA, such as MW-01, MW-04/04R, MW-09 and upgradient wells in the lower shallow portion of the LPA such as MW-16 and MW-20. The hydrographs from these wells do not show signs of a pumping influence as would be evidenced by rapid drawdown at the onset of System startup, or significant recovery during System downtime.

Hydrographs from the deep confined portion of the LPA show groundwater elevations distributed between a minimum of approximately 82 feet amsl and maximum of approximately 90 feet amsl (Figure 13). Generally, the average elevation of each hydrograph declines with distance from north to south along the direction of the interpreted hydraulic gradient. MW-27D and MW-23D, both upgradient, consistently show the highest groundwater elevations in the deep portion of the LPA, while progressively lower elevations are observed downgradient at MW-16D (mid-Site), MW-40D (southwest corner of the Site), and MW-22D (southeast corner of the Site).

3.2.2 GROUNDWATER QUALITY

OVERVIEW

Groundwater sample collection from the monitoring wells is conducted to monitor the VOC and 1,4-dioxane concentrations in the LPA underlying the Site. The analytical results for the 2022 monitoring events are presented in Table 13. The certified laboratory analytical reports for the 2022 samples are included in Appendix D. Historical analytical results for selected Site-specific constituents are presented in Table 14.

Concentrations for the primary COCs detected in samples from the shallow and deep monitoring wells are provided in Figures 14 and 15, respectively. Iso-concentration maps for select VOCs and 1,4-dioxane were prepared using the analytical data from the November 2022 monitoring event and are presented in Figures 16, 17, and 18 (shallow zone of the LPA) and Figures 19 and 20 (deep zone of the LPA). Contours were generated using the Kriging algorithm to interpolate the logarithmic transform of the VOC sampling results and adjusted by hand to correct boundary effects. The shallow zone iso-concentrations maps were developed using data from monitoring wells screened at depths of less than 45 feet because this is the primary interval for contaminant transport in the shallow zone at the Site. Therefore, data from monitoring wells MW-18, MW-20, and MW-39 were not included in the shallow zone iso-concentration maps based on their well screen depths. Monitoring wells MW-5R and MW-38R were also not included in the shallow zone iso-concentration maps because these wells are screened in a clay unit that is not representative of the primary interval of contaminant transport. In addition to the onsite wells, results from offsite monitoring wells MW-24D, MW-45, and MW-46D are presented on the iso-concentration

maps to help provide context with regards to the extent of the affected groundwater[6]. The lowest iso-concentration contour values were based on the applicable Cleanup Standards. For 1,4-dioxane the lowest contour is 4.8 µg/L, which corresponds to the MDE risk-based action level. The onsite Cleanup Standard of 15 µg/L, as set forth in the RAP, is shown as an intermediate (dashed in the drawing) contour. Although the recovery well data was not directly used to create the iso-concentration contours, these results were used to check and, if deemed appropriate, adjust the contour lines based on the zone of inflow for each recovery well.

SHALLOW ZONE OF LOWER PATAPSCO AQUIFER

As described in Section 3.2.1, groundwater flows in a generally northwestward direction in the shallow zone of the LPA beneath the former Kop-Flex property. For this portion of the aquifer, the highest concentrations of VOCs and 1,4-dioxane were detected in monitoring well MW-16 situated hydraulically upgradient of the shallow recovery wells (Figures 16, 17, and 18). Additional exceedances of the Cleanup Standards were found in eastern (upgradient) monitoring wells MW-04R (1,1-DCE, 1,1-DCA, and 1,4-dioxane) and MW-09 (1,1-DCE). Data for the western (downgradient) monitoring wells indicate 1,1-DCE at a level above the Cleanup Standard in samples from well MW-43.

The concentrations of 1,1-DCA, 1,1-DCE, and 1,4-dioxane exhibit generally similar distributions within the shallow water-bearing zone, with the respective plumes extending from east to west underneath the loading dock area and buildings toward the recovery wells (Figure 16, 17, and 18). Based on the interpolation method used to develop the iso-concentration contours, the inferred plume areas underlie most of the footprint of Catalent Building 2. In comparison, the computer-aid contours indicate the 1,1-DCE and 1,4-dioxane plumes only occur below the southern portion of Catalent Building 1, with the boundary for the 1,1-DCA plume extending along the south wall of the building. The upgradient portion of the plume extends a short distance onto the Williams-Scotsman property. Historically, concentrations below the Cleanup Standards have been found to the east of the Site (MW-45), and along the southern (MW-01), and western (MW-03 and MW-42) Site boundaries, thereby largely defining the extent of the affected groundwater.

DEEP ZONE OF LOWER PATAPSCO AQUIFER

Groundwater in the deep zone of the LPA flows in a southward direction across the former Kop-Flex property (see Section 3.1.2). Given the general flow paths in this portion of the aquifer, monitoring wells located upgradient of the deep recovery wells (i.e., MW-16D and MW-23D) had the highest VOC and 1,4-dioxane concentrations above the Cleanup Standards (Table 13, Figure 15). However, it should be noted that the concentrations of these constituents in samples from MW-24D on the adjoining Williams-Scotsman property had noticeably higher levels than those detected in any of the onsite wells.

Additional exceedances above the Cleanup Standards were detected in samples from monitoring wells MW-01D for 1,1-DCE and 1,1-DCA and MW-21D for 1,1-DCE during both 2022 sampling events (Table 13, Figure 15). For well MW-22D located in the southeastern portion of the Site, the concentration of 1,1-DCE exceeded the Cleanup Standard in the June 2022 sample. However, this well did not have any contaminants exceeding the Cleanup Standards during the November 2022 sampling event. The MW-22D results are consistent with an overall decreasing trend that has become near-asymptotic during the past four years, where concentrations of 1,4-dioxane have reached levels below the onsite Cleanup Standard of 15 µg/L and 1,1-DCE concentrations are near the Cleanup Standard of 7 µg/L. Monitoring well MW-41D is the deepest well in the deep zone of the LPA onsite and helps define the lower boundary of the onsite plumes. During the 2022 sampling events, the sample from MW-41D had no detections of CVOCs and only trace to very low concentrations of 1,4-dioxane were present in the samples.

Figures 19 and 20 provide the November 2022 iso-concentration maps for 1,1-DCE and 1,4-dioxane in the deep zone of the LPA. The iso-concentration maps show groundwater concentrations above the Cleanup Standards across the entire eastern portion of the Site and eventually offsite. The width of the COC-affected groundwater is defined by the sample results below their respective standards at well MW-22D to the east and wells MW-27D and MW-40D to the west. Evaluation of the sampling data indicates the highest concentrations of these COCs occur within localized, elongated areas underneath Catalent Building 1.

[6] The results from these offsite wells are described in more detail in Quarterly Status Report No. 25 to MDE and EPA, dated March 8, 2023.

HISTORICAL TRENDS IN COC CONCENTRATIONS

Figures 21 and 22 include plots of 1,1-DCA, 1,1-DCE, and 1,4-dioxane concentrations from late 2016 (pre-System start-up) through 2022 for wells screened in the shallow zone and the deep zone of the LPA, respectively. Plots were only generated for wells where concentrations of one or more of these compounds regularly exceed the Cleanup Standards.

In the shallow zone, several trends are apparent. At upgradient wells MW-04, MW-16, and to a lesser extent MW-09, a steep decline in 1,1-DCE concentrations occurred following System startup (Figure 21). Similar declines in 1,4-dioxane are apparent in the MW-04 and MW-09 samples, and 1,1-DCA also decreased during the initial months of System operation at MW-04. Rapid initial declines were followed by relatively steady concentrations of all three compounds throughout the remaining sampling history. At MW-43 located north of the recovery wells, this same initial decline is present followed by a protracted period of decreasing concentrations along a less steep trend through to the present reporting period. The early declines in VOC concentrations are possibly indicative of the influence of initial groundwater withdrawals removing groundwater in equilibrium with the porous matrix. After removal of this early slug of highly affected groundwater, the current concentrations are limited by the rate of diffusion of VOCs as they desorb from the soil matrix (i.e., as unaffected groundwater enters the System its concentrations increase at the rate of diffusion).

In contrast, a rapid increase in the concentrations of 1,4-dioxane occurred at MW-38R after System startup, perhaps as a result of advection of this highly soluble compound into the radius of influence. This assessment is further evidenced by relatively steady concentrations of this compound through time after System startup, which should only be possible with a constant source. Concentrations of 1,1-DCA at this well have also remained stable following System startup. The sampling history of MW-20 indicates relatively steady concentrations of 1,4-dioxane until 2022 when they declined significantly, whereas 1,1-DCA and 1,1-DCE have remained steady or gradually increased through time. Both wells are predominantly affected by 1,4-dioxane with lesser concentrations of other COCs. Neither well exhibits a long-term trend in concentrations of any of the Site-related compounds.

Three wells screened in the deep zone and positioned closest to the extraction wells, MW-1D, MW-21D, and MW-22D, show steep declines in concentrations that resemble those in most of the wells in the shallow zone (Figure 22). Concentrations of 1,1-DCA and 1,1-DCE decreased rapidly in these three wells after System startup as did 1,4-dioxane at the MW-1D location (1,4-dioxane is not present at MW-21D and MW-22D). Thereafter, concentrations of these compounds have remained relatively constant. Similar to the shallow zone, the concentration trends may be the result of the System removing an initial slug of groundwater in equilibrium with the aquifer matrix, followed by a period of time where VOC concentrations in groundwater are limited by the rate of diffusion. Correspondingly, rebound was observed due to System shutdown during the first half of 2022, when the concentrations of 1,1-DCE increased slightly in MW-21D and MW-22D.

Farther upgradient, MW-16D has shown a consistent and steady decline in 1,1-DCA and 1,1-DCE concentrations throughout its sampling history, whereas 1,4-dioxane concentrations in this well have remained stable. Well MW-23D, which is the farthest deep zone monitoring well from the extraction wells, does not exhibit appreciable trends in any of these three compounds, except a possible gradual decline in 1,4-dioxane.

Overall, the concentration *vs.* time plots indicate that System operation has resulted in a decline in the CVOCs and 1,4-dioxane levels in both the shallow and deep zones of the LPA at the Site. Concentration declines in monitoring well locations near the perimeter of the affected groundwater plume (i.e., MW-04/04R, MW-09, and MW-16D) suggest that the extent of inflow or capture has increased through time as pumping progressed. This interpretation of the concentration *vs.* time plots supports other existing lines of evidence that the System imparts an effective area of hydraulic capture within the areas of VOC-affected groundwater at the Site (see Figures 10 and 11 for the estimated capture areas).

4 CONCLUSIONS

4.1 ASSESSMENT OF SYSTEM OPERATION AND CLEANUP PROGRESS

Analysis of treated effluent samples during 2022 indicate the System is completely removing VOCs and approximately 98.6% of the 1,4-dioxane from the extracted groundwater. All System effluent samples collected in accordance with the NPDES Permit since System start-up in 2017 have been non-detect for VOCs, except for a single event in June 2019 (1,1,1-TCA at 3.4 µg/L). The June 2019 effluent sample was also one of only two effluent samples since System start-up that have contained a 1,4-dioxane concentration above the Site-specific cleanup level of 15 µg/L (37 µg/L in June 2019 and 43 µg/L in November 2020). There were no exceedances of the effluent limits specified in the NPDES Permit or the Site-specific 1,4-dioxane cleanup level during the 2022 operational period. Samples of the treated water will continue to be collected and analyzed pursuant to the monitoring requirements specified in the Permit.

System runtime during 2020-2022 (62-77%) has been significantly reduced as compared to 2017-2019 (91-94%). Runtime in recent years reflects multiple extended System shutdowns, both scheduled and unplanned. There have been several shutdowns related to the malfunctioning and later replacement of aging System equipment and instruments. During both 2020 and 2021, there was an extended, planned shutdown to perform onsite *ex-situ* cleaning of the resin to maintain System treatment capacity. During 2022, there was an extended System shutdown related to implementation of an alternate method for managing the boiler blowdown water. Spare parts for regularly replaced System components are kept onsite to prevent unanticipated extended downtime of the System in the future.

During 2023, WSP will complete an evaluation of the impact of RW-3S operation on the overall performance of the shallow recovery well system. This will involve evaluating the hydraulic response due to pumping from wells RW-1S and RW-2S and assessing the contaminant mass recovery from RW-3S.

Since the start-up of the hydraulic containment system in March 2017, the observed declines in the concentrations of 1,1-DCA, 1,1-DCE, and 1,4-dioxane in shallow monitoring wells, specifically MW-04/04R, MW-16, and MW-43, indicate that the shallow recovery wells are capturing the contaminant plume within the shallow zone of the LPA both within and downgradient of the source areas (see Figures 21 and 22). The effective containment of the plume is also indicated by the well-developed cone of depression centered around the shallow recovery wells in the western portion of the Site (see Figures 10 and 11) and groundwater quality results at or below the Cleanup Standards at wells located near the Site boundary (see Figures 17 and 18). The shallow zone groundwater beneath Catalent Building 2 still contains 1,1-DCE, 1,1-DCA, and 1,4-dioxane concentrations above their respective Cleanup Standards, although the concentrations have decreased for these constituents since the initiation of remedial pumping. The following changes in COC concentrations at monitoring well MW-16 indicate this trend in the groundwater quality:

- 1,1-DCE – decrease from 26,200 µg/L (December 2016) to 4,290 µg/L (November 2022);
- 1,1-DCA – decrease from 6,420 µg/L (December 2016) to 3,290 µg/L (November 2022); and
- 1,4-dioxane – decrease from 1,450 µg/L (December 2016) to 143 µg/L (November 2022)

The exceptions to the temporal changes noted above include monitoring well MW-20 in the eastern portion of the Site, and wells MW-38R, and MW-44, which lie within the area of influence for the shallow recovery wells. At these well locations, concentrations have increased for certain COCs after the initiation of remedial pumping, although all three wells show declines during 2022. The initial increase of COC concentrations at these wells was most likely related to facilitated transport of dissolved mass in response to pumping from the recovery wells. The COCs present at these well locations are eventually captured by the hydraulic containment system.

The groundwater inflow area for the deep recovery wells appears to encompass the inferred width of the VOC plume in the deep zone of the LPA at the Site. This determination is based on the flow paths in response to the hydraulic gradients created during pumping. The groundwater beneath the eastern portion of the Site contains 1,1-DCE and 1,4-dioxane concentrations above their respective Cleanup Standards, although the concentrations have decreased for these constituents since the initiation of remedial pumping. The COC concentrations at monitoring well MW-16D indicate this trend, where between

December 2016 (baseline sampling event) and November 2022, 1,1-DCE decreased from 254 µg/L to 80 µg/L and 1,4-dioxane decreased from 202 µg/L to 30 µg/L.

Overall, concentrations of Site contaminants still exceed the Cleanup Standards in some wells in both the shallow and deep zones of the LPA. However, the data also indicates that remedial pumping has been successful in removing contaminant mass from the aquifer, thereby making progress toward improving the groundwater quality of the aquifer.

4.2 PLANNED ACTIVITIES FOR 2023

The groundwater monitoring data indicate that the Site is progressing towards attainment of the RAOs and conditions for issuance of a Certificate of Completion for the groundwater response action, as specified in Section 16.2 of the October 2015 RAP. Groundwater pumping at the recovery wells is achieving effective onsite capture of the plumes in the impacted portions of the aquifer system, thereby preventing further offsite migration of Site-related contaminants. Based on evaluation of the groundwater monitoring data, the hydraulic containment system is functioning as designed and in accordance with the engineering design requirements. Given that concentrations of CVOCs and 1,4-dioxane remain above the Cleanup Standards in the onsite area, the continued operation of the System is deemed necessary during 2023.

During 2023, WSP plans to complete *ex-situ* cleaning of the treatment resin with a heated caustic solution as was implemented in early 2020 and late 2021. Recirculation Technologies, LLC, a vendor specializing in the cleaning and maintenance of regenerable resins used for water treatment, previously completed the work during 2020 and 2021 and will be retained for the 2023 cleaning event.

In addition to the monitoring requirements specified in the Permit, samples of the treated effluent water from the System will continue to be collected and analyzed for TRC as requested by MDE. WSP will continue voluntary testing for TRC until issuance of the new NPDES permit. Groundwater monitoring will continue to be performed semi-annually to further assess the hydraulic response to remedial pumping and changes in COC concentrations in the impacted aquifer. As part of the CMI Five-Year Assessment Report (WSP 2023), WSP recommended reducing the monitoring frequency from semi-annually to annually for three monitoring wells (MW-05R, MW-18, and MW-40D). The EPA and MDE approved the proposed modifications to the Site groundwater monitoring program in a May 23, 2023, email communication to EMERSUB 16 and WSP. The changes to the sampling frequency from these wells will be incorporated into the monitoring activities specified in the 2015 Groundwater Monitoring Plan (WSP 2015b).

REFERENCES

- WSP. 2015a. Response Action Plan Revision 2.0. October 2.
- WSP. 2015b. Groundwater Monitoring Plan Revision 1.0. September 17.
- WSP. 2018. Operation, Maintenance & Monitoring Manual Revision 3.0. May 24.
- WSP. 2023. Corrective Measures Implementation Five-Year Assessment Report. February 1.

ACRONYMS

µg/L	micrograms per liter
amsl	above mean sea level
CMI	Corrective Measures Implementation
COC	constituent of concern
CVOC	chlorinated volatile organic compound
DCA	dichloroethane
DCE	dichloroethene
EPA	United States Environmental Protection Agency
EQ	equalization
GPM	gallons per minute
lbs.	pounds
LPA	Lower Patapsco Aquifer
MDE	Maryland Department of the Environment
mg/L	milligrams per liter
NPDES	National Pollutant Discharge Elimination System
OM&M	operations, maintenance, and monitoring
PCE	tetrachloroethene
PVC	polyvinyl chloride
RAO	Response Action Objective
RAP	Response Action Plan
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
SQG	small quantity generator
SU	standard units
TCA	trichloroethane
TCE	trichloroethene
TRC	total residual chlorine
VFD	variable frequency drive
VOC	volatile organic compound
VSQG	very small quantity generator

FIGURES

MW-46D

MW-27D

VERIZON

POND

RIPRAP

OUTFALL 001

STONY RUN

MW-23D

CATALENT BUILDING 1

TREATMENT EQUIPMENT BUILDING

MW-03

MW-43

MW-09

MW-39

RW-1S

MW-38R

MW-45

MW-20

MW-04

MW-16

MW-16D

MW-42

MW-18

RW-2S

MW-05R

MW-40D

CATALENT BUILDING 2

RW-3S

MW-41D

MW-22D

MW-44

MW-01

MW-21D

RW-1D

RW-2D

MW-01D

MW-24D

POND

WILLIAMS SCOTSMAN

LEGEND

- MW-05 WATER TABLE MONITORING WELL
- MW-18 LOWER UNCONFINED AQUIFER MONITORING WELL
- MW-21D CONFINED AQUIFER MONITORING WELL
- RW-2S SHALLOW EXTRACTION WELL
- RW-2D DEEP EXTRACTION WELL
- JUNCTION BOX/VALVE BOX
- WATER DISCHARGE/POWER SUPPLY TRENCH
- TREATED WATER EFFLUENT DISCHARGE
- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA

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REVISIONS

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1	Revised:			
2	Revised:			
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HYDRAULIC CONTAINMENT SYSTEM AND MONITORING WELL LOCATIONS

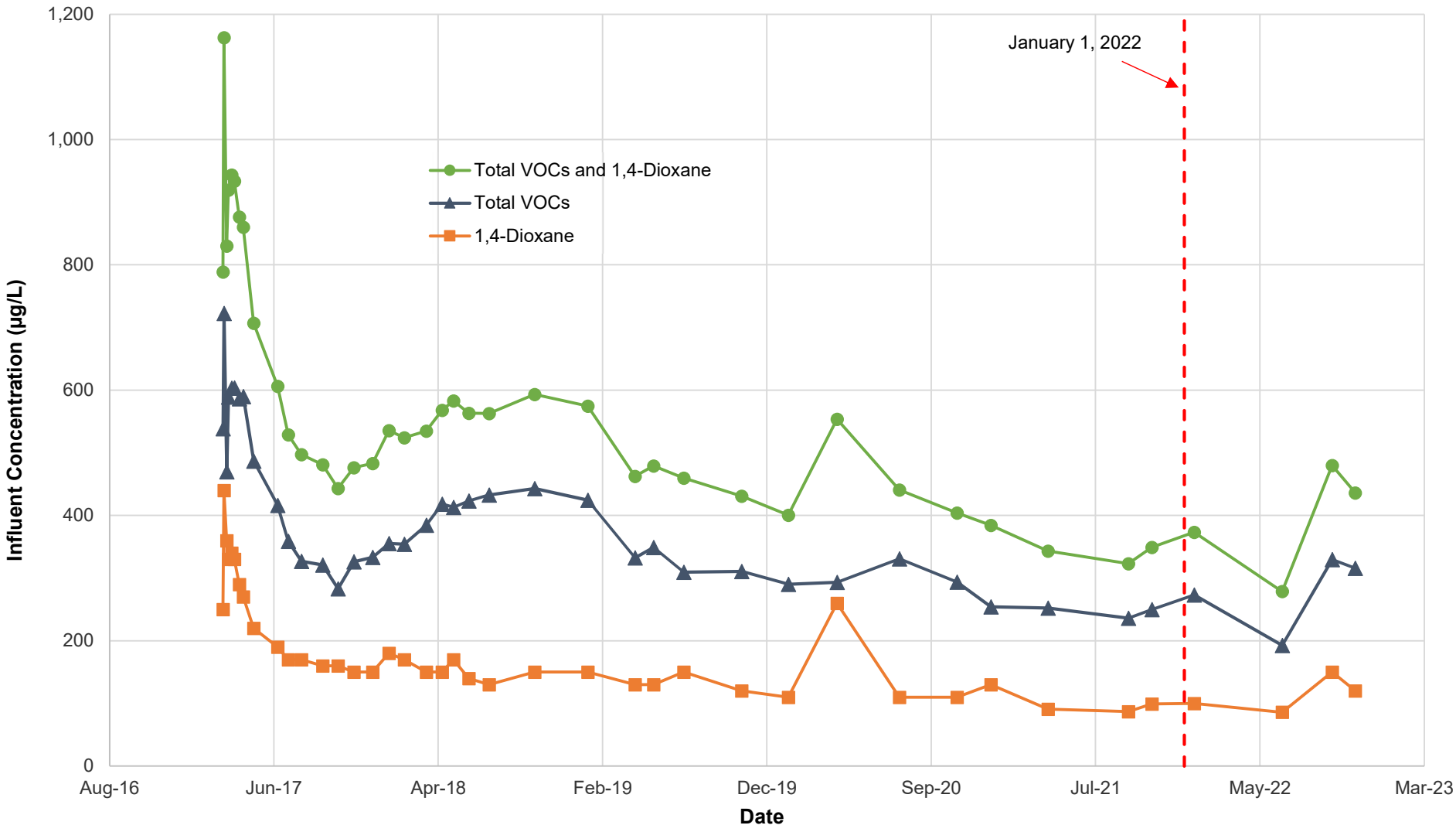
FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

WSP USA Inc.
13530 DULLES TECHNOLOGY DR. SUITE 300
HERNDON, VA 20171
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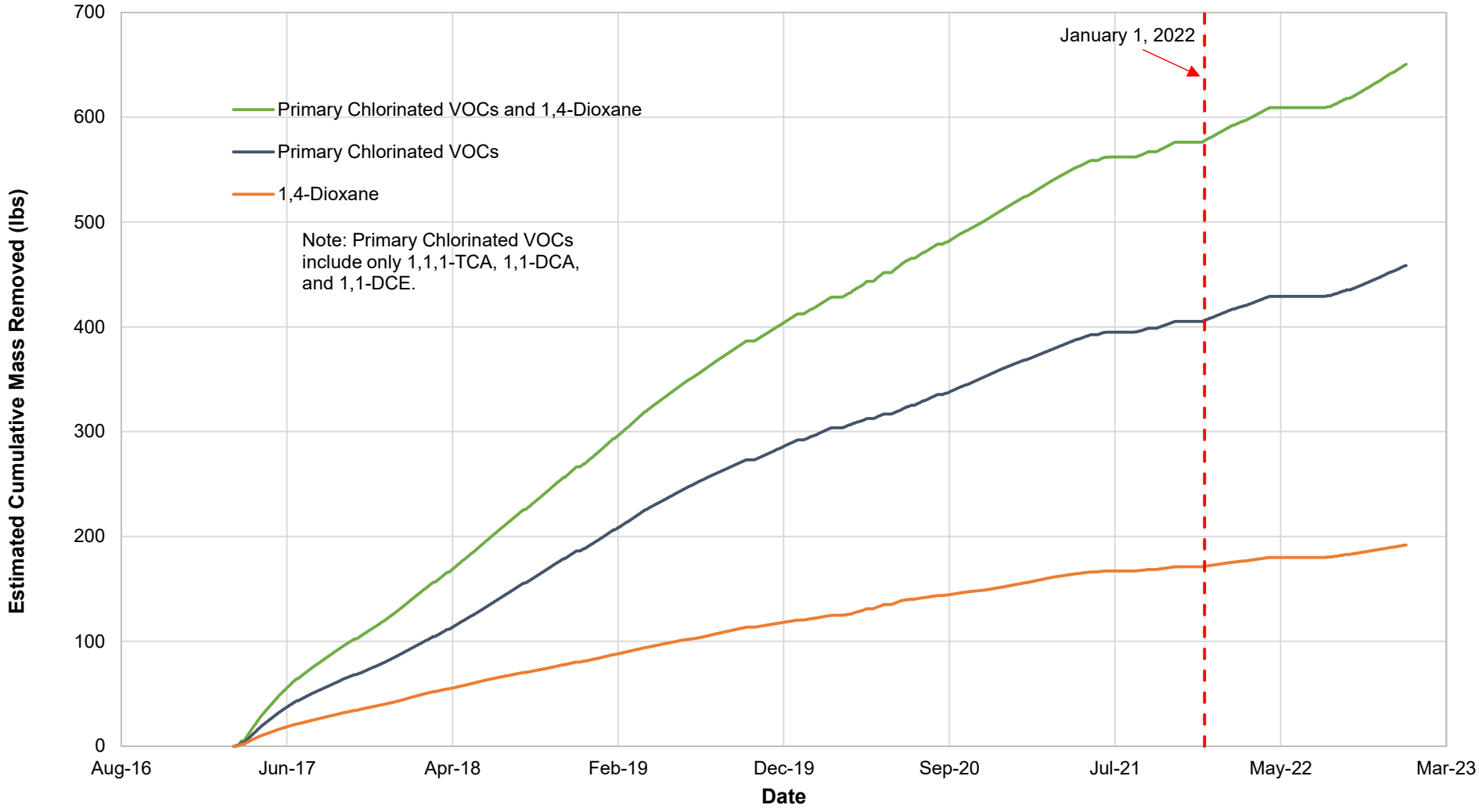
FIGURE 1

Drawing Number
314V1545.010-108



WSP USA Inc.
13530 Dulles Technology Drive Suite 300
Herndon, Virginia 20171
703-709-6500

Figure 2
Historical Influent Concentrations
Former Kop-Flex Facility Site
Hanover, Maryland



WSP USA Inc.
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Herndon, Virginia 20171
703-709-6500

Figure 3
Cumulative Mass Removal
Former Kop-Flex Facility Site
Hanover, Maryland

MW-46D

MW-27D

VERIZON

POND

RIPRAP

OUTFALL 001

STONY RUN

MW-23D

CATALENT BUILDING 1

TREATMENT EQUIPMENT BUILDING

MW-03

MW-43

MW-09

WILLIAMS SCOTSMAN

MW-45

MW-39

RW-1S
2.2 gpm

MW-38R

MW-20

MW-04

MW-16

MW-16D

MW-42

MW-18

RW-2S
1.7 gpm

MW-05R

MW-40D

CATALENT BUILDING 2

RW-3S
0.8 gpm

MW-44

MW-41D

MW-22D

MW-21D

RW-1D
16.9 gpm

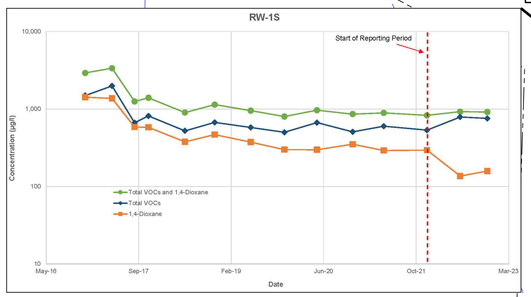
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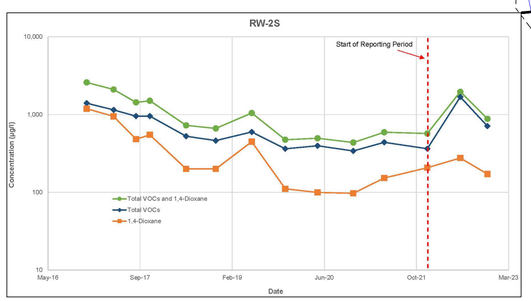
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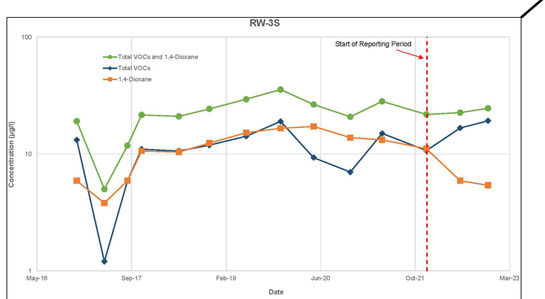
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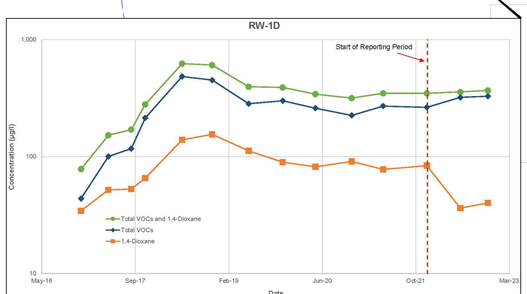
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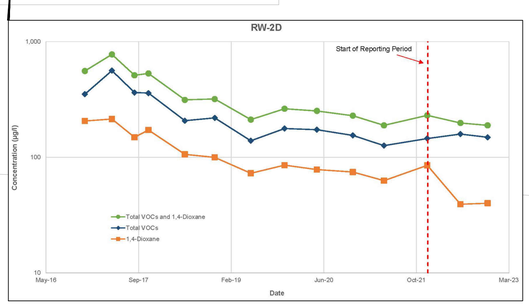
POND











LEGEND

- MW-05 — WATER TABLE MONITORING WELL
- MW-18 — LOWER UNCONFINED AQUIFER MONITORING WELL
- MW-21D — CONFINED AQUIFER MONITORING WELL
- RW-2S — SHALLOW EXTRACTION WELL
- RW-2D — DEEP EXTRACTION WELL
- JUNCTION BOX/VALVE BOX
- WATER DISCHARGE/POWER SUPPLY TRENCH
- TREATED WATER EFFLUENT DISCHARGE
- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- 4.9 gpm — AVERAGE FLOW RATE IN GALLONS PER MINUTE (INCLUDES NONOPERATIONAL AND PARTIALLY OPERATIONAL DAYS)

N

0 60 120 180
SCALE IN FEET

D

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REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

SEAL

DATE

DRAWN BY ECC
CHECKED SLP 5/17/2023
APPROVED RM

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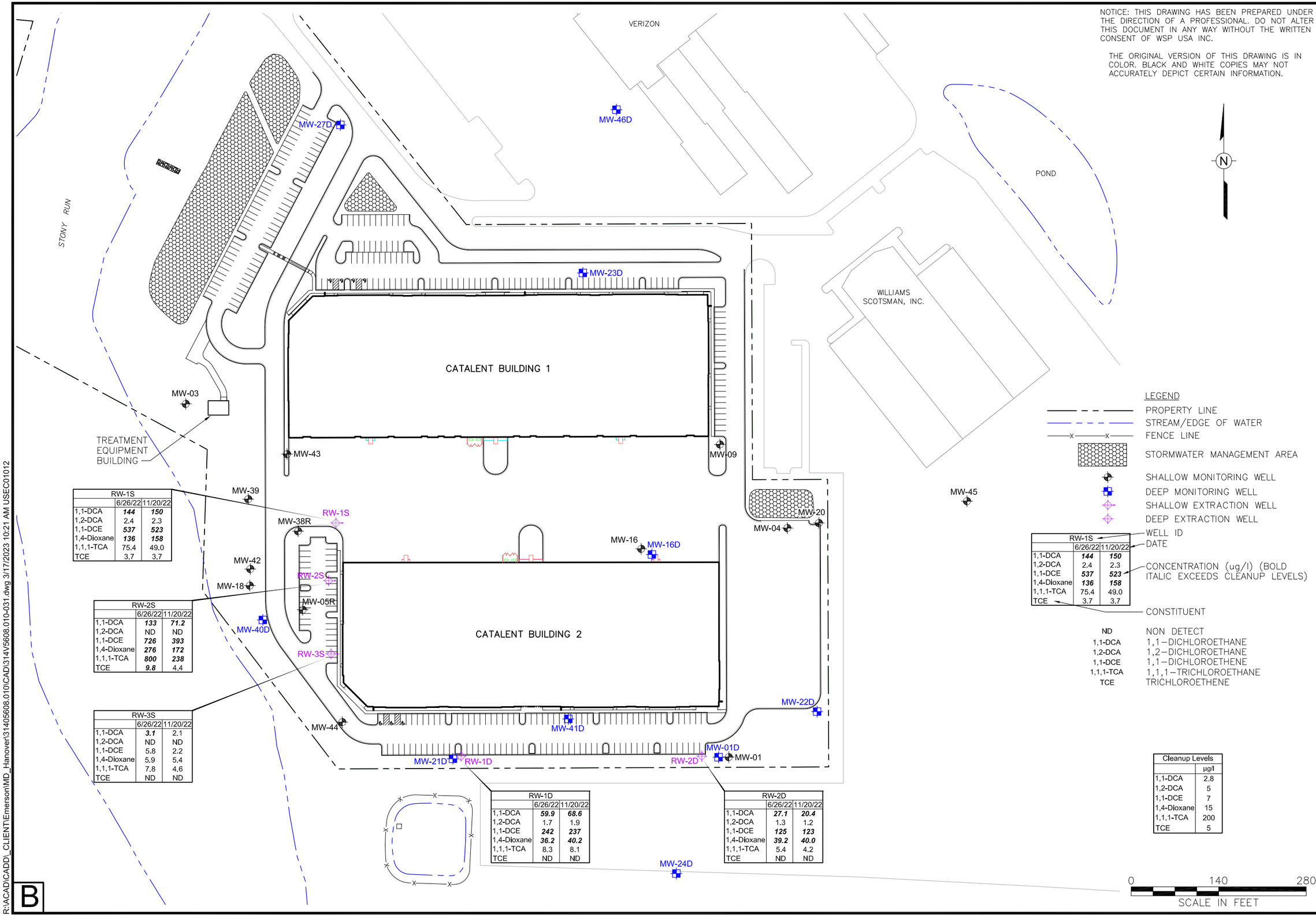
VOC AND 1,4-DIOXANE CONCENTRATIONS IN RECOVERY WELL DISCHARGE (2017 THROUGH 2022)

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

WSP USA Inc.
13530 DULLES TECHNOLOGY DR, SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

FIGURE 4

Drawing Number
314V5608.010-030



RW-1S	6/26/22	11/20/22
1,1-DCA	***144***	***150***
1,2-DCA	2.4	2.3
1,1-DCE	***537***	***523***
1,4-Dioxane	***136***	***158***
1,1,1-TCA	75.4	49.0
TCE	3.7	3.7

RW-2S	6/26/22	11/20/22
1,1-DCA	***133***	***71.2***
1,2-DCA	ND	ND
1,1-DCE	***726***	***393***
1,4-Dioxane	***276***	***172***
1,1,1-TCA	***800***	***238***
TCE	***9.8***	4.4

RW-3S	6/26/22	11/20/22
1,1-DCA	***3.1***	2.1
1,2-DCA	ND	ND
1,1-DCE	5.8	2.2
1,4-Dioxane	5.9	5.4
1,1,1-TCA	7.8	4.6
TCE	ND	ND

RW-1D	6/26/22	11/20/22
1,1-DCA	***59.9***	***68.6***
1,2-DCA	1.7	1.9
1,1-DCE	***242***	***237***
1,4-Dioxane	***36.2***	***40.2***
1,1,1-TCA	8.3	8.1
TCE	ND	ND

RW-2D	6/26/22	11/20/22
1,1-DCA	***27.1***	***20.4***
1,2-DCA	1.3	1.2
1,1-DCE	***125***	***123***
1,4-Dioxane	***39.2***	***40.0***
1,1,1-TCA	5.4	4.2
TCE	ND	ND

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LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

RW-1S	6/26/22	11/20/22
1,1-DCA	***144***	***150***
1,2-DCA	2.4	2.3
1,1-DCE	***537***	***523***
1,4-Dioxane	***136***	***158***
1,1,1-TCA	75.4	49.0
TCE	3.7	3.7

WELL ID
DATE
CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)
CONSTITUENT

ND	NON DETECT
1,1-DCA	1,1-DICHLOROETHANE
1,2-DCA	1,2-DICHLOROETHANE
1,1-DCE	1,1-DICHLOROETHENE
1,1,1-TCA	1,1,1-TRICHLOROETHANE
TCE	TRICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5

Drawn By: EGC
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Approved: KM
DWG Name: 314V5608.010-031

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 5

GROUNDWATER RECOVERY WELL RESULTS (2022)

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SUITE 300
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STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

NORTH WAREHOUSE

SOUTH WAREHOUSE

MW-03 *107.39*

MW-43

MW-09 *114.60*

MW-39

MW-38R *107.74*

RW-1S

RW-2S

MW-5R *109.14*

RW-3S

MW-42 *NM*

MW-18

MW-16

MW-20

MW-04 *114.50*

MW-45 *113.81*

MW-44

MW-01 *114.95*

108 109 110 111 112 113 114

POND

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- *114.50* GROUNDWATER SURFACE ELEVATION (FEET MSL)
- GROUNDWATER SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

NOTE:
WATER LEVELS MEASURED DURING PERIOD OF NO REMEDIAL PUMPING.

0 140 280
SCALE IN FEET

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FORMER KOP-FLEX FACILITY SITE
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EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 6

WATER TABLE CONTOUR MAP
(JUNE 2022)

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13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
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STONY RUN

TREATMENT EQUIPMENT BUILDING

NORTH WAREHOUSE

SOUTH WAREHOUSE

WILLIAMS SCOTSMAN, INC.

POND

POND

MW-03

MW-42
102.33

MW-39
102.38

MW-38R

RW-1S

RW-2S

MW-5R

RW-3S

MW-42

MW-18
103.05

MW-44
111.30

MW-09

MW-16
112.78

MW-04

MW-20
110.99

MW-01

103 104 105 106 107 108 109 110 111 112

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- 112.78 PIEZOMETRIC SURFACE ELEVATION (FEET MSL)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

NOTE:
WATER LEVELS MEASURED DURING PERIOD OF NO REMEDIAL PUMPING.

0 140 280
SCALE IN FEET

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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 7

PIEZOMETRIC SURFACE CONTOUR MAP FOR THE LOWER PORTION OF THE SHALLOW ZONE OF THE LOWER PATASPCO AQUIFER (JUNE 2022)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

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VERIZON

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

NORTH WAREHOUSE

SOUTH WAREHOUSE

TREATMENT EQUIPMENT BUILDING

MW-27D 87.38

MW-46D 87.64

MW-23D 86.84

MW-03

MW-43

MW-09

MW-39

MW-38R

RW-1S

MW-42

MW-18

RW-2S

MW-5R

MW-40D 84.06

RW-3S

MW-16

MW-16D 87.04

MW-45

MW-20

MW-04

MW-44

MW-41D

MW-22D 83.95

MW-21D 83.19

RW-1D

RW-2D

MW-01D 81.94

MW-01

MW-24D 78.04

86

84

82

80

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL
- 87.64 GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR (JUNE 2022)
- GROUNDWATER FLOW DIRECTION

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0 140 280
SCALE IN FEET

B

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PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 8

POTENTIOMETRIC SURFACE CONTOUR MAP FOR THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER (JUNE 2022)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
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STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

NORTH WAREHOUSE

SOUTH WAREHOUSE

MW-03

MW-43

MW-39

MW-38R

RW-1S

106.39

MW-42
107.42

RW-2S

MW-18

MW-5R
107.55

RW-3S

MW-44

MW-09
114.02

MW-16

MW-04R
113.46

MW-20

MW-45
113.18

MW-01
114.15

107

108

109

110

111

112

113

114

114

POND

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- 114.15 GROUNDWATER SURFACE ELEVATION (FEET MSL)
- GROUNDWATER SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH

NOTE:
THE NOVEMBER 2022 GROUNDWATER ELEVATIONS ARE REPRESENTATIVE OF PUMPING CONDITIONS.

0 140 280
SCALE IN FEET

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ST. LOUIS, MISSOURI

FIGURE 9

WATER TABLE CONTOUR MAP
(NOVEMBER 2022)

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SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

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STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

NORTH WAREHOUSE

SOUTH WAREHOUSE

TREATMENT EQUIPMENT BUILDING

MW-03 107.31

MW-43 101.29

MW-39 101.11

MW-38R

RW-1S 102.49

RW-2S 94.68

MW-42

MW-18 101.71

MW-5R

RW-3S 108.46

MW-44 111.25

MW-09

MW-04R

MW-20 113.67

MW-16 112.25

MW-01

98 100 102 104 106 108 110 112

POND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- 112.25 PIEZOMETRIC SURFACE ELEVATION (FEET MSL)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH
- APPROXIMATE RADIUS OF HYDRAULIC CAPTURE

NOTE:

1. THE NOVEMBER 2022 GROUNDWATER ELEVATIONS ARE REPRESENTATIVE OF PUMPING CONDITIONS.
2. THE APPROXIMATE RADIUS OF HYDRAULIC CAPTURE IS BASED ON THE LOCATIONS OF OBSERVED DECREASING VOC TRENDS IN MONITORING WELLS, AND THE INTERPOLATED DRAWDOWN CONE IMPARTED BY PUMPING.

0 140 280
SCALE IN FEET

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EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 10

PIEZOMETRIC SURFACE CONTOUR MAP FOR THE LOWER PORTION OF THE SHALLOW ZONE OF THE LOWER PATASPCO AQUIFER (NOVEMBER 2022)

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13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

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MW-46D
86.39

MW-27D
86.02

86

STONY RUN

POND

MW-23D
85.35

CATALENT BUILDING 1

84

WILLIAMS
SCOTSMAN, INC.

TREATMENT
EQUIPMENT
BUILDING

MW-16D
NM

MW-40D
82.52

CATALENT BUILDING 2

MW-22D
81.95

MW-41D

MW-01D
69.38

MW-21D
74.35

RW-1D

RW-2D

72

74

76

78

80

82

MW-24D
75.99

POND

NOTE:

1. THE NOVEMBER 2022 GROUNDWATER ELEVATIONS ARE REPRESENTATIVE OF PUMPING CONDITIONS.
2. THE APPROXIMATE RADIUS OF HYDRAULIC CAPTURE IS BASED ON THE LOCATIONS OF OBSERVED DECREASING VOC TRENDS IN MONITORING WELLS, AND THE INTERPOLATED DRAWDOWN CONE IMPARTED BY PUMPING.

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- DEEP MONITORING WELL
- DEEP EXTRACTION WELL
- 84.20 POTENTIOMETRIC SURFACE ELEVATION (FEET MSL)
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH
- APPROXIMATE RADIUS OF HYDRAULIC CAPTURE

0 140 280
SCALE IN FEET

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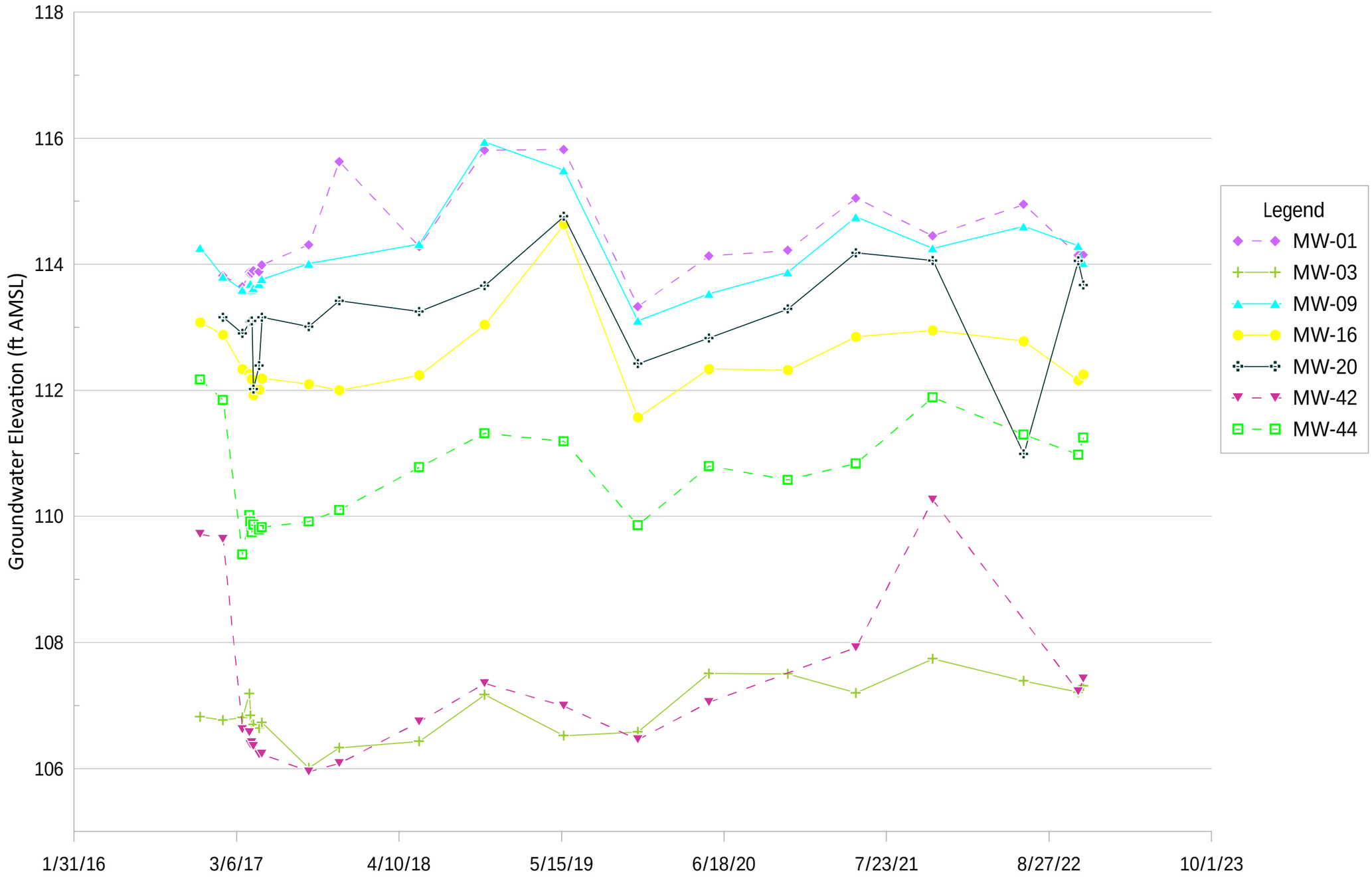
FIGURE 11

POTENTIOMETRIC SURFACE CONTOUR MAP FOR THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER (NOVEMBER 2022)

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13530 DULLES TECHNOLOGY DR
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HERNDON, VA 20171
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Shallow Well Hydrographs



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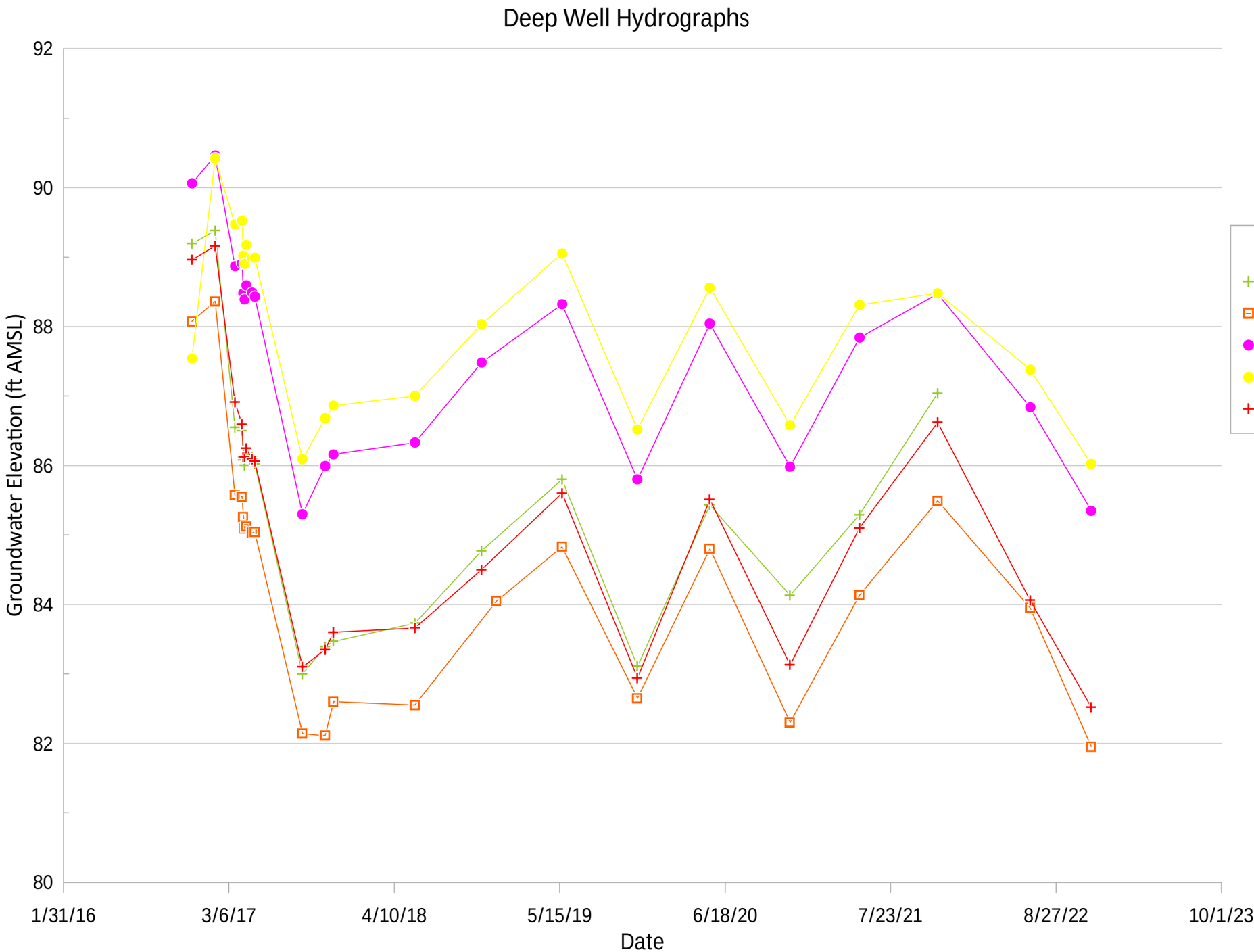
FORMER KOP-FLEX FACILITY
HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

FIGURE 12

HYDROGRAPHS OF WELLS SCREENED IN THE SHALLOW ZONE OF THE LOWER PATAPSCO AQUIFER (2016-2022)

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SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500



B

Drawn By:	ESR 04/20/23
Checked:	
Approved:	
DWG Name:	31405608.010_0423A

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HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

FIGURE 13

HYDROGRAPHS OF WELLS SCREENED IN THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER (2016-2022)

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TEL: +1 703.709.6500

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VERIZON

POND

STONY RUN

NORTH WAREHOUSE

SOUTH WAREHOUSE

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

MW-27D
MW-46D
MW-23D
MW-03
MW-43
MW-09
MW-39
MW-38R
MW-04R
MW-45
MW-20
MW-04
MW-16
MW-16D
RW-1S
RW-2S
MW-5R
MW-42
MW-18
MW-40D
RW-3S
MW-44
MW-41D
MW-22D
MW-21D
RW-1D
RW-2D
MW-01D
MW-01
MW-24D

MW-43		
	6/26/22	11/20/22
1,1-DCA	2.5	1.7
1,2-DCA	ND	ND
1,1-DCE	***29.4***	***20.3***
1,4-Dioxane	7.0	9.6
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-03		
	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-39		
	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	0.22	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-38R		
	6/26/22	11/20/22
1,1-DCA	***7.6***	***7.1***
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	14.4	***20.1***
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-42		
	7/15/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	5.6	5.4
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-18		
	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-5R		
	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	1.0	1.1
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-44		
	6/26/22	11/20/22
1,1-DCA	2.3	2.4
1,2-DCA	ND	1.0
1,1-DCE	3.2	3.9
1,4-Dioxane	2.5	4.2
1,1,1-TCA	5.9	8.0
TCE	ND	ND

MW-09		
	6/26/22	11/20/22
1,1-DCA	***3.0***	1.9
1,2-DCA	ND	ND
1,1-DCE	***57.7***	***35.7***
1,4-Dioxane	4,5	7.5
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-16		
	6/26/22	11/20/22
1,1-DCA	***1,030***	***3,290***
1,2-DCA	ND	ND
1,1-DCE	***1,210***	***4,290***
1,4-Dioxane	***26.4***	***143***
1,1,1-TCA	***1,610***	***2,960***
TCE	***13.8***	***28***

MW-04R	
	11/20/22
1,1-DCA	***37.4***
1,2-DCA	ND
1,1-DCE	***76***
1,4-Dioxane	***57.3***
1,1,1-TCA	1.1
TCE	ND

MW-20		
	6/26/22	11/20/22
1,1-DCA	***294***	***258***
1,2-DCA	***10.8***	***9.7***
1,1-DCE	***426***	***348***
1,4-Dioxane	***377***	***560***
1,1,1-TCA	2.7	2.4
TCE	2.7	2.7

MW-04	
	6/26/22
1,1-DCA	***173***
1,2-DCA	3.1
1,1-DCE	***339***
1,4-Dioxane	***86.8***
1,1,1-TCA	1.8
TCE	3

MW-01		
	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	0.23	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ABANDONED WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

MW-20		
	6/26/22	11/20/22
1,1-DCA	***294***	***258***
1,2-DCA	***10.8***	***9.7***
1,1-DCE	***426***	***348***
1,4-Dioxane	***377***	***560***
1,1,1-TCA	2.7	2.4
TCE	2.7	2.7

- WELL ID
- DATE
- CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)
- CONSTITUENT

ND	NON DETECT
1,1-DCA	1,1–DICHLOROETHANE
1,2-DCA	1,2–DICHLOROETHANE
1,1-DCE	1,1–DICHLOROETHENE
1,1,1-TCA	1,1,1–TRICHLOROETHANE
TCE	TRICHLOROETHENE

Cleanup Levels	
	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5

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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 14

SAMPLING RESULTS FOR THE MONITORING WELLS SCREENED IN THE SHALLOW ZONE OF THE LOWER PATAPSCO AQUIFER (2022)

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

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VERIZON

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

NORTH WAREHOUSE

SOUTH WAREHOUSE

TREATMENT EQUIPMENT BUILDING

MW-27D

	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	0.13	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-23D

	6/26/22	11/20/22
1,1-DCA	***34.6***	***33.6***
1,2-DCA	1.5	1.7
1,1-DCE	***138***	***140***
1,4-Dioxane	***27.0***	***59.6***
1,1,1-TCA	10.7	9.7
TCE	ND	ND

MW-40D

	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	0.18	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-16D

	7/15/22	12/29/22
1,1-DCA	***27.4***	***16.4***
1,2-DCA	1.7	ND
1,1-DCE	***136***	***80.1***
1,4-Dioxane	***39.2***	***29.9***
1,1,1-TCA	8.3	4.7
TCE	ND	ND

MW-22D

	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	***9.0***	6.1
1,4-Dioxane	1.6	2.7
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-1D

	6/26/22	11/20/22
1,1-DCA	***3.1***	***3.0***
1,2-DCA	ND	ND
1,1-DCE	***19.1***	***16.8***
1,4-Dioxane	4.0	6.8
1,1,1-TCA	1.3	1.0
TCE	ND	ND

MW-21D

	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	***24.5***	***17.6***
1,4-Dioxane	4.2	5.5
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-41D

	6/26/22	11/20/22
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	0.62	1.1
1,1,1-TCA	ND	ND
TCE	ND	ND

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ABANDONED WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

MW-1D
- WELL ID
- DATE

CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)

CONSTITUENT

ND NON DETECT

1,1-DCA 1,1-DICHLOROETHANE
1,2-DCA 1,2-DICHLOROETHANE
1,1-DCE 1,1-DICHLOROETHENE
1,1,1-TCA 1,1,1-TRICHLOROETHANE
TCE TRICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5

0 140 280
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FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND
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EMERSUB 16 LLC
ST. LOUIS, MISSOURI

FIGURE 15

SAMPLING RESULTS FOR THE MONITORING WELLS SCREENED IN THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER (2022)

WSP USA Inc.
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STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 ND

MW-43 1.7

MW-09 1.9

MW-39

MW-38R

RW-1S

RW-2S

RW-3S

MW-42 ND

MW-18

MW-5R

MW-44 2.4

MW-01 ND

MW-16 3,290

MW-04R 37.4

MW-20

MW-04

MW-45 ND

106

104

108

110

112

98

100

102

104

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ABANDONED MONITORING WELL
- ND NON-DETECT
- 37.4 1,1-DCA CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)

1,1-DCA CONCENTRATIONS IN µg/l:

- 2.8 TO <50
- 50 TO <100
- 100 TO <500
- 500 TO 1,000
- >1,000

0 140 280

SCALE IN FEET

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ST. LOUIS, MISSOURI

FIGURE 16

1,1-DCA ISO-CONCENTRATIONS DURING GROUNDWATER EXTRACTION FROM THE SHALLOW PORTION OF THE LOWER PATAPSCO AQUIFER (NOVEMBER 2022)

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TEL: +1 703.709.6500

STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 ND

MW-43 20.3

MW-39

MW-38R

RW-1S

MW-42 ND

MW-18

RW-2S

MW-5R

RW-3S

MW-44 3.9

MW-09 35.7

MW-04R 76

MW-20

MW-04 ✱

MW-16 4,290

MW-45 ND

MW-01 ND

106 104 106 108 110 112 98 100 102 104

N

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ✱ ABANDONED MONITORING WELL
- ND NON-DETECT
- 53.3 1,1-DCE CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)

1,1-DCE CONCENTRATIONS IN µg/l:

- 7 TO <50
- 50 TO <100
- 100 TO <500
- 500 TO 1,000
- >1,000

0 140 280

SCALE IN FEET

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ST. LOUIS, MISSOURI

FIGURE 17

1,1-DCE ISO-CONCENTRATIONS DURING GROUNDWATER EXTRACTION FROM THE SHALLOW PORTION OF THE LOWER PATAPSCO AQUIFER (NOVEMBER 2022)

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STONY RUN

POND

WILLIAMS SCOTSMAN, INC.

TREATMENT EQUIPMENT BUILDING

CATALENT BUILDING 1

CATALENT BUILDING 2

MW-03 ND

MW-43 9.6

MW-39

MW-38R

RW-1S

MW-42 5.4

MW-18

RW-2S

MW-5R

RW-3S

MW-44 4.2

MW-01 ND

MW-09 7.5

MW-16 143

MW-04R 57.3

MW-20

MW-04

MW-45 ND

106

104

108

110

112

98

100

102

104

LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- SHALLOW EXTRACTION WELL
- ABANDONED MONITORING WELL
- ND NON-DETECT
- 7.5 1,4-DIOXANE CONCENTRATION (µg/L)
- PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)

15 µg/l SITE-SPECIFIC 1,4-DIOXANE GROUNDWATER QUALITY STANDARD

1,4-DIOXANE CONCENTRATIONS IN µg/l:

- 4.6 TO <50
- 50 TO <100
- >100

0 140 280

SCALE IN FEET

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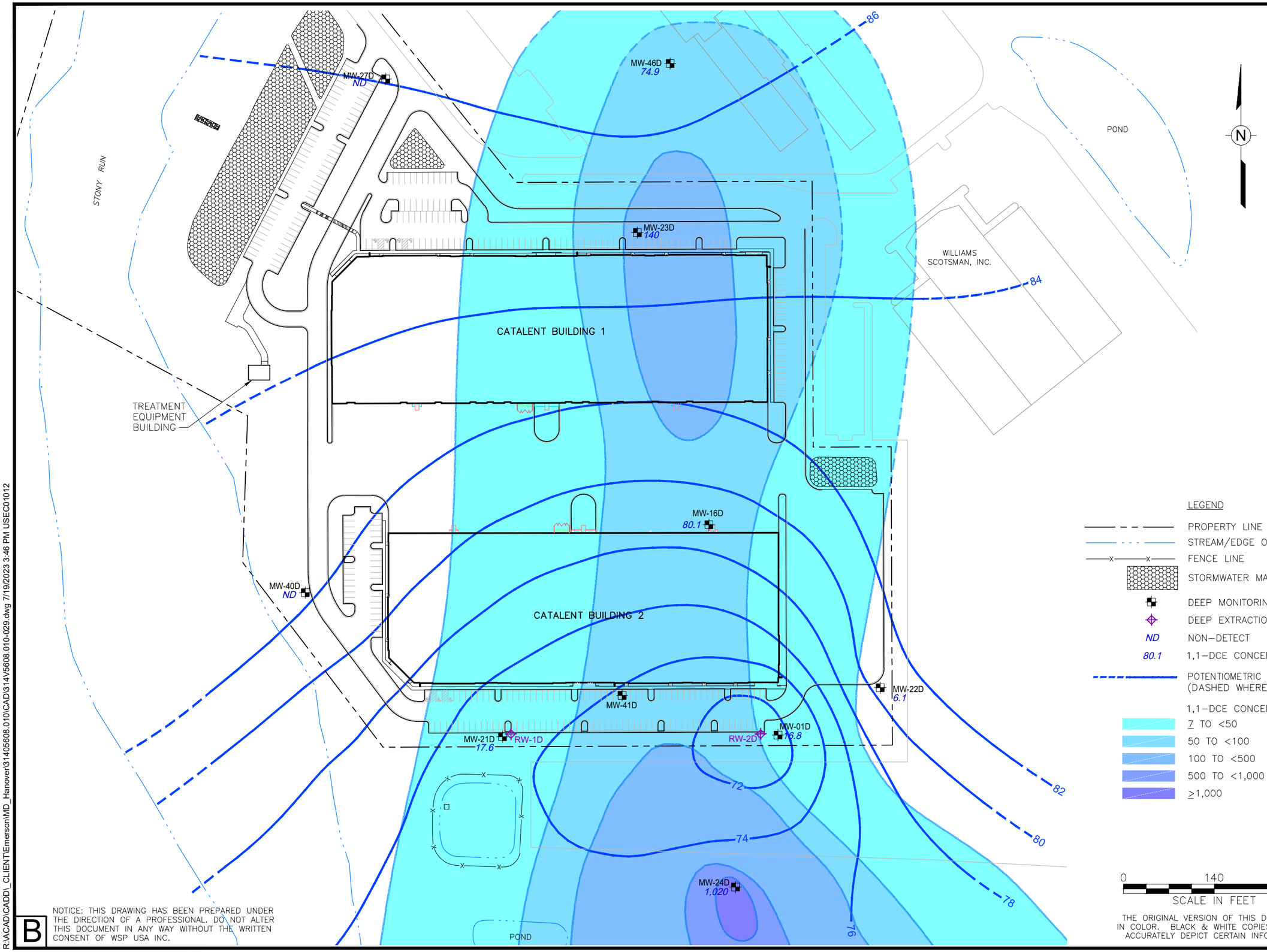
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ST. LOUIS, MISSOURI

FIGURE 18

1,4-DIOXANE ISO-CONCENTRATIONS DURING GROUNDWATER EXTRACTION FROM THE SHALLOW PORTION OF THE LOWER PATAPSCO AQUIFER (NOVEMBER 2022)

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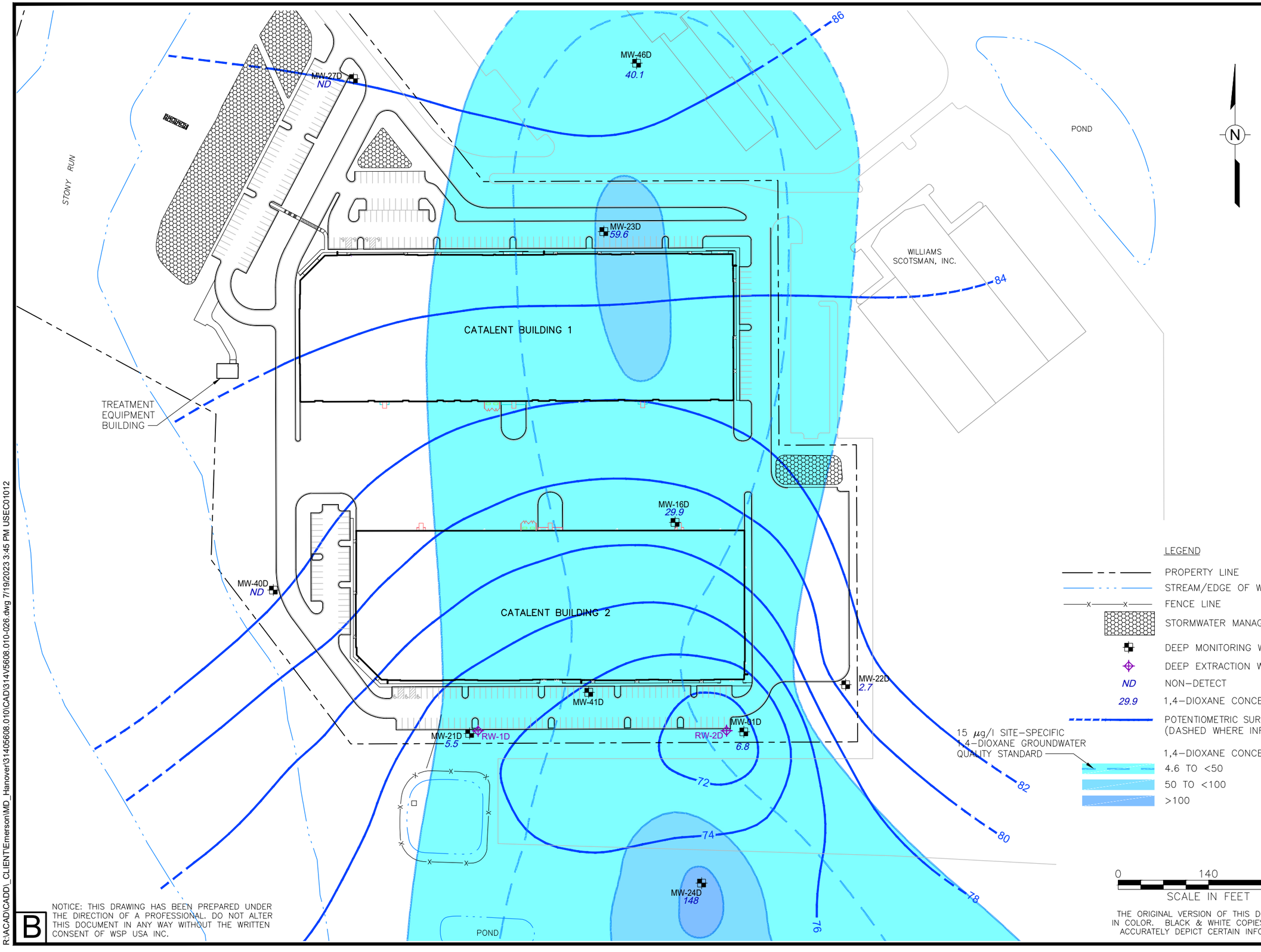
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ST. LOUIS, MISSOURI

FIGURE 19

1,1-DCE ISO-CONCENTRATIONS DURING GROUNDWATER EXTRACTION FROM THE DEEPER PORTION OF THE LOWER PATAPSCO AQUIFER (NOVEMBER 2022)

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FIGURE 20

1,4-DIOXANE ISO-CONCENTRATIONS DURING GROUNDWATER EXTRACTION FROM THE DEEPER PORTION OF THE LOWER PATAPSCO AQUIFER (NOVEMBER 2022)

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MW-46D

MW-27D

VERIZON

POND

RIPRAP

OUTFALL 001

STONY RUN

MW-23D

CATALENT BUILDING 1

TREATMENT EQUIPMENT BUILDING

MW-03

MW-43

MW-09

MW-04R

MW-20

MW-04

MW-39

RW-1S

MW-38R

MW-16

MW-16D

MW-42

MW-18

RW-2S

MW-5R

MW-40D

RW-3S

CATALENT BUILDING 2

MW-44

MW-41D

MW-22D

MW-21D

RW-1D

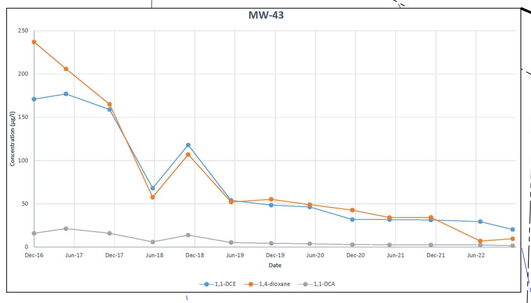
RW-2D

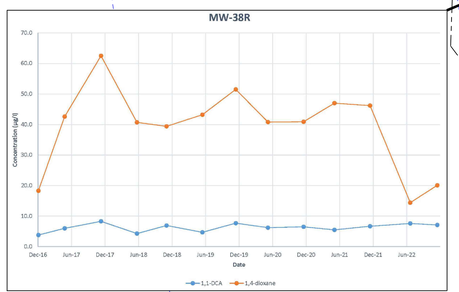
MW-01D

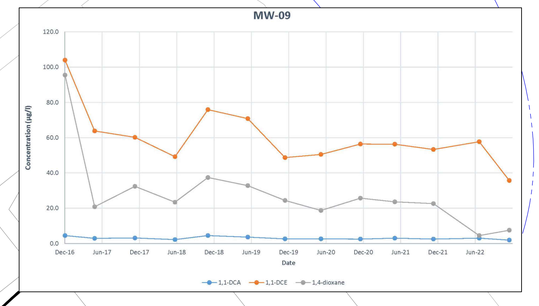
MW-01

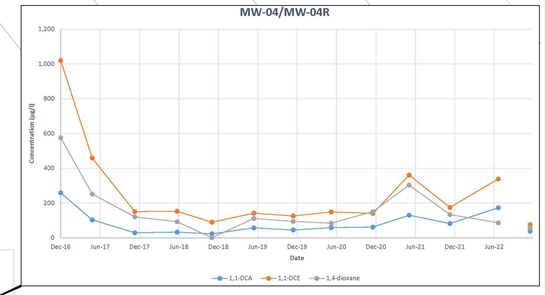
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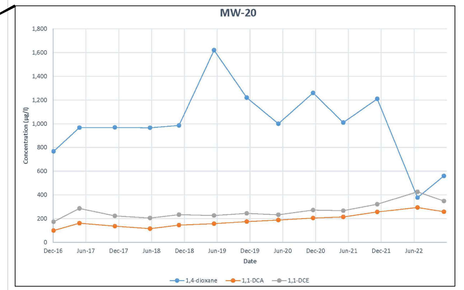
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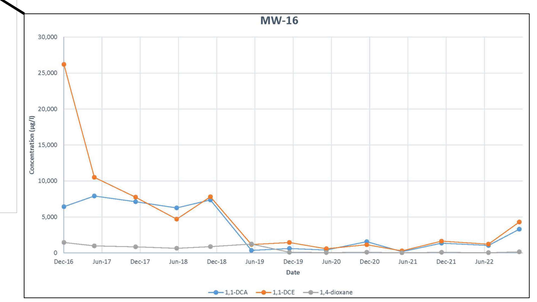












LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ABANDONED MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL
- 1,1-DCA 1,1-DICHLOROETHANE
- 1,1-DCE 1,1-DICHLOROETHENE

Cleanup Levels	
	µg/l
1,1-DCA	2.8
1,1-DCE	7
1,4-Dioxane	15

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2	Revised:	Chkd: Appr.:
3	Revised:	Chkd: Appr.:

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DATE

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HISTORICAL 1,1-DCA, 1,1-DCE, AND 1,4-DIOXANE CONCENTRATION PLOTS FOR THE MONITORING WELLS SCREENED IN THE SHALLOW ZONE OF THE LOWER PATAPSCO AQUIFER (2016-2022)

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

WSP USA Inc.
13530 DULLES TECHNOLOGY DR, SUITE 300
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TEL: +1 703.709.6500

FIGURE 21

Drawing Number
314V5608.010-038

MW-46D

MW-27D

VERIZON

POND

RIPRAP

OUTFALL 001

STONY RUN

MW-23D

CATALENT BUILDING 1

TREATMENT EQUIPMENT BUILDING

MW-03

MW-43

MW-09

MW-39

MW-04R

MW-20

MW-04

RW-1S

MW-38R

MW-16

MW-16D

MW-42

MW-18

RW-2S

MW-5R

MW-40D

CATALENT BUILDING 2

RW-3S

MW-44

MW-41D

MW-22D

MW-21D

RW-1D

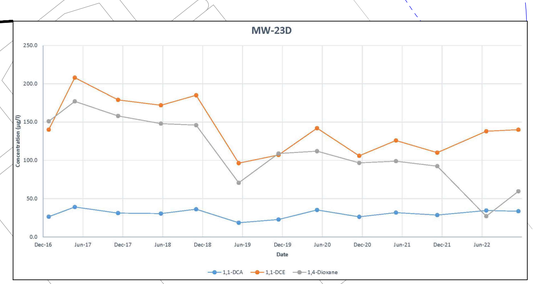
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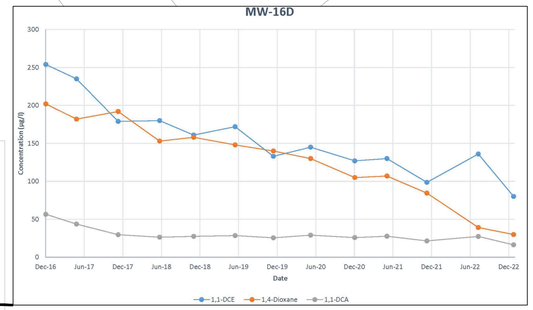
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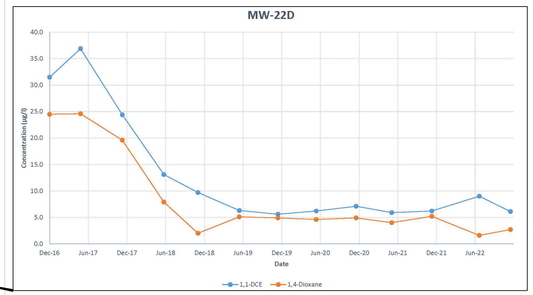
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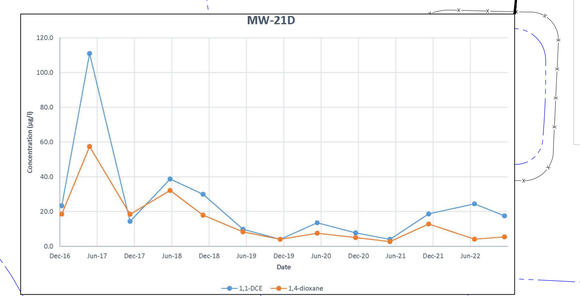
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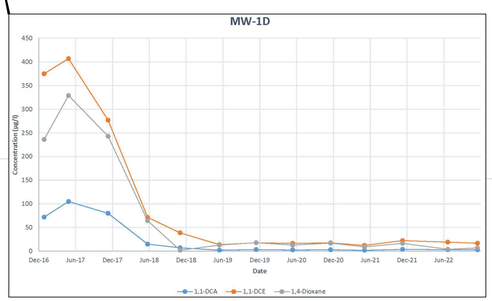
POND











LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- FENCE LINE
- STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ABANDONED MONITORING WELL
- SHALLOW EXTRACTION WELL
- DEEP EXTRACTION WELL

1,1-DCA 1,1-DICHLOROETHANE
1,1-DCE 1,1-DICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,1-DCE	7
1,4-Dioxane	15

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REVISIONS

REV	DESCRIPTION	Chkd:	Appr.:
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

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DATE

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HISTORICAL 1,1-DCA, 1,1-DCE, AND 1,4-DIOXANE CONCENTRATION PLOTS FOR THE MONITORING WELLS SCREENED IN THE DEEP ZONE OF THE LOWER PATAPSCO AQUIFER (2016-2022)

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

WSP USA Inc.
13530 DULLES TECHNOLOGY DR., SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

FIGURE 22

Drawing Number
314V5608.010-038

TABLES

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II		Influent VSP-1 3/13/2017		Influent VSP-1 3/15/2017		Influent VSP-1 3/20/2017		Influent VSP-1 3/23/2017		Influent VSP-1 3/29/2017		Influent VSP-1 4/3/2017		Influent VSP-1 4/12/2017		Influent VSP-1 4/19/2017		Influent VSP-1 5/8/2017		Influent VSP-1 6/21/2017		Influent VSP-1 7/10/2017		Influent VSP-1 8/3/2017		Influent VSP-1 9/11/2017		Influent VSP-1 10/9/2017		Influent VSP-1 11/7/2017	
Volatile Organic Compounds (EPA Method 8260)																															
1,1,1-Trichloroethane	71-55-6	200	(c)	55		150		92		81		82		62		55		49		41		39		44		41		35		32		32	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**180**		**200**		**110**		**140**		**150**		**140**		**140**		**120**		**86**		**59**		**57**		**49**		**40**		**44**		**47**	
1,1-Dichloroethene	75-35-4	7	(c)	**260**		**360**		**260**		**360**		**360**		**390**		**380**		**410**		**350**		**310**		**250**		**230**		**240**		**200**		**240**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	1.6		2.0		2.5		3.1		3.5		3.6		3.5		3.0		2.6		2.1		2.1		2.0		1.7		1.6		1.8	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		25		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	1	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	591-78-6	--		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		10		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	1	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	5		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.75		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	3.0		10		2.3		2.4		2.3		2.7		2.5		2.5		2.7		2.7		2.3		1.8		1.7		2.6		2.6	
Chloroform	67-66-3	80		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methyl-t-butyl ether	1634-04-4	20		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5		1	U	**10**		1	U	1	U	1.1		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	1.9		**10**		2.2		2.8		2.8		3.0		3.0		2.9		2.6		2.2		2.2		2.0		1.7		1.6		1.7	
Trichlorofluoromethane	75-69-4	--		5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2	(c)	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	2.2		10		1.2		1.8		1.9		2.5		2.6		2.2		1.9		1.4		1.3		1.3		1	U	1.2		1.3	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
	TOTAL VOCs:	--		538.7		752		470.2		591.1		603.6		603.8		586.6		589.6		486.8		416.4		358.9		327.1		320.1		283.0		326.4	
Volatile Organic Compounds (EPA Method 8260 - SIM)																															
1,4-Dioxane	71-55-6	15	(c)	**250**		**440**		**360**		**330**		**340**		**330**		**290**		**270**		**220**		**190**		**170**		**170**		**160**		**160**		**150**	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II		Influent VSP-1 12/11/2017		Influent VSP-1 1/10/2018		Influent VSP-1 2/7/2018		Influent VSP-1 3/19/2018		Influent VSP-1 4/17/2018		Influent VSP-1 5/8/2018		Influent VSP-1 6/5/2018		Influent VSP-1 7/12/2018 (e)		Influent VSP-1 10/3/2018		Influent VSP-1 1/8/2019		Influent VSP-1 4/4/2019		Influent VSP-1 5/8/2019		Influent VSP-1 7/2/2019		Influent VSP-1 10/16/2019		Influent VSP-1 1/9/2020	
Volatile Organic Compounds (EPA Method 8260)																																	
1,1,1-Trichloroethane	71-55-6	200	(c)	26		25		26		23		22		19		23		24		28		20		27		29		27		20		19	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**48**		**51**		**58**		**61**		**64**		**70**		**76**		**74**		**72**		**63**		**54**		**51**		**44**		**43**		**44**	
1,1-Dichloroethene	75-35-4	7	(c)	**250**		**270**		**260**		**290**		**320**		**310**		**310**		**320**		**330**		**330**		**240**		**260**		**230**		**240**		**220**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	1.8		2.0		2.4		2.3		2.3		2.5		2.6		2.4		2.7		2.2		2.0		1.8		1.7		1.5		1.5	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	591-78-6	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	4.2		4.0		4.1		4.6		5.8		7.3		7.2		7.8		6.1		5.7		4.5		4.0		3.9		4.0		3.5	
Chloroform	67-66-3	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methyl-t-butyl ether	1634-04-4	20		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**1.6**		1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	1.6		1.7		1.8		1.7		1.7		1.7		1.9		1.8		1.9		1.6		1.6		1.6		1.5		1.2		1.2	
Trichlorofluoromethane	75-69-4	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	1.6		1.7		2.0		2.2		2.3		2.5		2.7		2.7		2.6		2.1		1.8		1.7		1.6		1.3		1.2	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
	TOTAL VOCs:	--		333.2		355.4		354.3		384.8		418.1		413.0		423.4		432.7		443.3		424.6		332.5		349.1		309.7		311.0		290.4	
Volatile Organic Compounds (EPA Method 8260 - SIM)																																	
1,4-Dioxane	71-55-6	15	(c)	**150**		**180**		**170**		**150**		**150**		**170**		**140**		**130**		**150**		**150**		**130**		**130**		**150**		**120**		**110**	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II		Influent VSP-1 4/7/2020		Influent VSP-1 7/30/2020		Influent VSP-1 11/12/2020		Influent VSP-1 1/13/2021		Influent VSP-1 4/27/2021		Influent VSP-1 9/21/2021		Influent VSP-1 11/3/2021		Influent VSP-1 1/19/2022		Influent VSP-1 6/26/2022		Influent VSP-1 9/28/2022		Influent VSP-1 11/9/2022	
Volatile Organic Compounds (EPA Method 8260)																									
1,1,1-Trichloroethane	71-55-6	200	(c)	21		24		19		16		16		15		15		15		15		25		22	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8	(d)	**45**		**49**		**47**		**41**		**40**		**35**		**39**		**42**		**34**		**47**		**54**	
1,1-Dichloroethene	75-35-4	7	(c)	**220**		**250**		**220**		**190**		**190**		**180**		**190**		**210**		**140**		**250**		**230**	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5	(c)	1.5		1.6		1.4		1.3		1.2		1.2		1.2		1.4		1.0		1.3		1.7	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone	591-78-6	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Benzene	71-43-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	74-83-9	0.75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	56-23-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100	(d)	3.7		3.7		4.2		3.7		3.9		2.9		3.8		3.7		2.8		3.6		5.2	
Chloroform	67-66-3	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--		10	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	124-48-1	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--		10	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl-t-butyl ether	1634-04-4	20		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--		10	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	75-09-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5	(c)	1.2		1.2		1.1		1.0		1	U	1.0		1	U	1	U	1	U	1.4		1.3	
Trichlorofluoromethane	75-69-4	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	75-01-4	2	(c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70	(c)	1.2		1.4		1.2		1.2		1.2		1.1		1.2		1.3		1	U	1.4		1.7	
cis-1,3-Dichloropropene	10061-01-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000		2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
	TOTAL VOCs:	--		293.6		330.9		293.9		254.2		252.3		236.2		250.2		273.4		192.8		329.7		315.9	
Volatile Organic Compounds (EPA Method 8260 - SIM)																									
1,4-Dioxane	71-55-6	15	(c)	**260**		**110**		**110**		**130**		**91**		**87**		**99**		**100**		**86**		**150**		**120**	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Notes:

a/ MDE = Maryland Department of the Environment; EPA = US Environmental Protection Agency; VOC = volatile organic compound; SIM = Selected Ion Monitoring;
U = not detected above the method detection limit; -- = no existing cleanup standard.
All concentrations are in micrograms per liter (µg/L).
Results shown in highlight and **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/land/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-

c/ Numeric cleanup standards are equal to those in Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

d/ Numeric cleanup standards for 1,1-dichloroethane and chloroethane reflect the current standards promulgated by the State of Maryland in October 2018 and differ from those in Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

e/ Reduced influent monitoring frequency to quarterly effective July 2018.

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 03/13/2017		Effluent VSP-4 3/20/2017		Effluent VSP-4 3/29/2017		Effluent VSP-4 3/30/2017	Effluent VSP-4 4/3/2017		Effluent VSP-4 5/8/2017		Effluent VSP-4 6/21/2017		Effluent VSP-4 7/10/2017		Effluent VSP-4 8/3/2017		Effluent VSP-4 9/11/2017	
Volatile Organic Compounds (EPA Method 624)																							
1,1,1-Trichloroethane	µg/L	71-55-6			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1-Dichloroethane	µg/L	75-34-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1-Dichloroethene	µg/L	75-35-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichloroethane	µg/L	107-06-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichloropropane	µg/L	78-87-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Acrolein	µg/L	107-02-8			NA		NA		NA		NA	NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA	NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromodichloromethane	µg/L	75-27-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromoform	µg/L	75-25-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromomethane	µg/L	74-83-9			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Carbon Tetrachloride	µg/L	56-23-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chlorobenzene	µg/L	108-90-7			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloroethane	µg/L	75-00-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloroform	µg/L	67-66-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloromethane	µg/L	74-87-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dibromochloromethane	µg/L	124-48-1			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dichlorodifluoromethane	µg/L	75-71-8			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Ethylbenzene	µg/L	100-41-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Methylene Chloride	µg/L	75-09-2			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Tetrachloroethylene	µg/L	127-18-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Toluene	µg/L	108-88-3			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Trichloroethene	µg/L	79-01-6			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Trichlorofluoromethane	µg/L	75-69-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Vinyl Chloride	µg/L	75-01-4			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
TOTAL VOCs:					ND		ND		ND		NA	ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 03/13/2017		Effluent VSP-4 3/20/2017		Effluent VSP-4 3/29/2017		Effluent VSP-4 3/30/2017	Effluent VSP-4 4/3/2017		Effluent VSP-4 5/8/2017		Effluent VSP-4 6/21/2017		Effluent VSP-4 7/10/2017		Effluent VSP-4 8/3/2017		Effluent VSP-4 9/11/2017	
Total Metals and Hardness (EPA Method 200.8)																							
Calcium	µg/L	7440-70-2			28,600		3,650		3,400		NA	2,840		NA		3,440		NA		NA		NA	
Copper	µg/L	7440-50-8	13		1.0	U	1.0	U	1.0	U	NA	3.2		4.7		4.3		4.6		5.0		4.6	
Hardness (Ca & Mg)	mg/L	HARDCAMG			91		15		14		NA	12		15		14		14		15		16	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	NA	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			4,690		1,470		1,260		NA	1,220		NA		1,400		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		1.5		29.9		2.6		NA	7.7		9.4		9.2		9.7		10.1		10.7	
Zinc	µg/L	7440-66-6	120		20	U	**179**		27.2		NA	24.7		20.2		20	U	23.7		22.8		48.9	
Dissolved Metals																							
Copper	µg/L	7440-50-8			1.0	U	1.0	U	1.0	U	NA	1.4		3.5		1.9		2.3		1.1		2.7	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	NA	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			1.0	U	27.3		2.5		NA	8		9.3		9.3		9.3		1	U	9.7	
Zinc	µg/L	7440-66-6			20	U	163		20	U	NA	20	U	20	U	20	U	20	U	20	U	20	U
Total Suspended Solids (SM 2540D)																							
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	NA	1.0	U	1.0	U	2.0	U	2.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																							
Biological Oxygen Demand, 5 Day	mg/L	BOD5			2.0	U	2.0	U	3.0	U	NA	2.0	U	2.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																							
pH	SU	-	6.5 - 8.5		7.29		6.88		6.84		NA	6.56		6.72		7.05		7.02		7.50		8.05	
Dissolved Oxygen	mg/L	-	≥ 5		7.08		8.14		10.65		NA	7.35		11.05		13.50		15.00		17.30		16.45	
Daily Flow Rate (b)	gpd	-			43,200		93,600		108,000		NA	103,680		102,240		102,816		99,216		92,880		92,736	
Nitrogen																							
Nitrogen, Total	lbs/qtr				NA		NA		NA		5.71	NA		110.68		NA		98.67		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		0.02	U	NA	0.02	U	NA		0.2	U	NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		0.68		NA	0.91		NA		0.95		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		0.1	U	NA	0.1	U	NA		0.1	U	NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		0.4	U	NA	0.4	U	NA		0.4	U	NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		0.4	U	NA	0.4	U	NA		0.4	U	NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 10/9/2017		Effluent VSP-4 11/7/2017		Effluent VSP-4 12/11/2017		Effluent VSP-4 1/10/2018		Effluent VSP-4 2/7/2018		Effluent VSP-4 3/19/2018		Effluent VSP-4 4/17/2018		Effluent VSP-4 5/8/2018		Effluent VSP-4 6/5/2018		Effluent VSP-4 7/12/2018	
											(c)													
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 10/9/2017		Effluent VSP-4 11/7/2017		Effluent VSP-4 12/11/2017		Effluent VSP-4 1/10/2018		Effluent VSP-4 2/7/2018		Effluent VSP-4 3/19/2018		Effluent VSP-4 4/17/2018		Effluent VSP-4 5/8/2018		Effluent VSP-4 6/5/2018		Effluent VSP-4 7/12/2018	
											(c)													
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		3,980		4,030		4,280		NA		NA		4,200	
Copper	µg/L	7440-50-8	13		4.6		1.0	U	4.0		4.2		4.0		4.9		2.1		1.3		2.4		5.0	
Hardness (Ca & Mg)	mg/L	HARDCAMG			15		16		16		18		16		17		18		18		16		17	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		1,560		1,620		1,810		NA		NA		1,650	
Nickel	µg/L	7440-02-0	470		10.6		10.8		10.7		11.1		11.2		11.4		8.4		13.2		11.6		12.6	
Zinc	µg/L	7440-66-6	120		24.6		21.2		20.6		28.6		22		26.9		28.4		24.5		32.4		27.9	
Dissolved Metals																								
Copper	µg/L	7440-50-8			3.2		1.0	U	2.8		3.1		2.7		4.1		1.9		1.2		1.4		3.4	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			10.3		10.6		10.1	U	11.7		10.8		12.3		8.1		12.3		10.0		11.6	
Zinc	µg/L	7440-66-6			20	U	20	U	20	U	20.7		20	U	23.8		20	U	20.6		20.0	U	21.2	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	2.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		7.41		6.60		7.80		7.48		7.60		7.48		7.99		7.61		7.53		7.74	
Dissolved Oxygen	mg/L	-	≥ 5		17.60		18.65		17.79		15.60		15.93		15.22		12.13		13.30		12.63		11.76	
Daily Flow Rate (b)	gpd	-			82,878		86,809		95,592		97,690		97,015		88,665		90,352		94,346		97,707		96,390	
Nitrogen																								
Nitrogen, Total	lbs/qtr				93.24		NA		NA		130.22		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			0.2	U	NA		NA		0.2	U	NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			0.92		NA		NA		1.4		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			0.1	U	NA		NA		0.1	U	NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			0.4	U	NA		NA		0.4	U	NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			0.4	U	NA		NA		0.4	U	NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 8/8/2018		Effluent VSP-4 9/6/2018		Effluent VSP-4 10/3/2018		Effluent VSP-4 11/6/2018		Effluent VSP-4 12/6/2018		Effluent VSP-4 1/8/2019		Effluent VSP-4 2/5/2019		Effluent VSP-4 3/7/2019		Effluent VSP-4 4/4/2019		Effluent VSP-4 5/8/2019	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA	
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 8/8/2018		Effluent VSP-4 9/6/2018		Effluent VSP-4 10/3/2018		Effluent VSP-4 11/6/2018		Effluent VSP-4 12/6/2018		Effluent VSP-4 1/8/2019		Effluent VSP-4 2/5/2019		Effluent VSP-4 3/7/2019		Effluent VSP-4 4/4/2019		Effluent VSP-4 5/8/2019	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			4,170		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		4.0		3.8		4.2		2.1		2.9		1.0	U	1.7		3.7		3.9		4.3	
Hardness (Ca & Mg)	mg/L	HARDCAMG			17		18		17		18		18		19		18		17		16		18	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			1,690		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		12.1		12.0		12.0		13.3		13		16.6		13.6		12.6		11.6		13.2	
Zinc	µg/L	7440-66-6	120		25.8		26.0		31.8		20	U	23.4		26.5		27.5		25.8		22.4		25.1	
Dissolved Metals																								
Copper	µg/L	7440-50-8			2.6		2.2		2.8		1.2		2.3		1.0	U	1.0	U	3.2		3.2		3.5	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			11.6		10.9		11.6		11.6		12.1		14		13.2		11.3		13.3		12.4	
Zinc	µg/L	7440-66-6			51.6		20	U	28.4		20	U	20	U	20.5		20.7		20	U	20	U	20	U
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			2.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		6.94		8.05		6.80		6.81		6.97		6.85		6.75		7.20		7.15		6.72	
Dissolved Oxygen	mg/L	-	≥ 5		12.45		13.12		8.50		10.33		12.15		8.82		8.85		7.51		7.17		7.28	
Daily Flow Rate (b)	gpd	-			85,875		96,894		93,553		77,496		87,236		92,672		97,420		98,934		104,205		101,014	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 6/12/2019		Effluent VSP-4 7/2/2019		Effluent VSP-4 8/1/2019		Effluent VSP-4 9/4/2019		Effluent VSP-4 10/16/2019		Effluent VSP-4 11/4/2019		Effluent VSP-4 12/2/2019		Effluent VSP-4 1/9/2020		Effluent VSP-4 2/4/2020		Effluent VSP-4 3/24/2020	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			3.4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					3.4		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 6/12/2019		Effluent VSP-4 7/2/2019		Effluent VSP-4 8/1/2019		Effluent VSP-4 9/4/2019		Effluent VSP-4 10/16/2019		Effluent VSP-4 11/4/2019		Effluent VSP-4 12/2/2019		Effluent VSP-4 1/9/2020		Effluent VSP-4 2/4/2020		Effluent VSP-4 3/24/2020	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		5		2.6		1.4		3.8		3.7		3.9		3.6		2.7		1.0	U	3.3	
Hardness (Ca & Mg)	mg/L	HARDCAMG			21		19		17		20		18		17		14		20		13.0		17	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		13.9		8.9		8.9		13.8		13.0		13.0		12.3		13.1		4.5		9.2	
Zinc	µg/L	7440-66-6	120		29.5		39.4		22.2		25.2		28.9		28.0		26.8		25.3		20.0	U	23.2	
Dissolved Metals																								
Copper	µg/L	7440-50-8			3.4		2.0		1.0	U	1.6		1.6		1.5		1.1		3.6		1.0	U	3.2	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			12.6		9.0		8.8		13.0		12.5		12.6		11.8		13.3		1.5		11.6	
Zinc	µg/L	7440-66-6			20.3		20	U	20	U	20.1		20.9		28.8		20	U	22.4		20.0	U	22.4	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		6.55		6.52		7.01		6.79		6.99		6.99		7.06		6.55		8.14		6.63	
Dissolved Oxygen	mg/L	-	≥ 5		9.86		7.78		7.76		5.75		8.30		6.94		8.46		8.16		8.13		6.95	
Daily Flow Rate (b)	gpd	-			95,834		98,658		93,473		74,748		69,097		96,262		79,991		77,418		85,908		43,238	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 4/7/2020		Effluent VSP-4 5/28/2020		Effluent VSP-4 6/29/2020		Effluent VSP-4 7/30/2020		Effluent VSP-4 8/26/2020		Effluent VSP-4 9/28/2020		Effluent VSP-4 10/26/2020		Effluent VSP-4 11/12/2020		Effluent VSP-4 12/3/2020		Effluent VSP-4 1/13/2021	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 4/7/2020		Effluent VSP-4 5/28/2020		Effluent VSP-4 6/29/2020		Effluent VSP-4 7/30/2020		Effluent VSP-4 8/26/2020		Effluent VSP-4 9/28/2020		Effluent VSP-4 10/26/2020		Effluent VSP-4 11/12/2020		Effluent VSP-4 12/3/2020		Effluent VSP-4 1/13/2021	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		1.8		2.6		5.5		2.7		5.0		6.2		6.7		2.2		2.7		6.2	
Hardness (Ca & Mg)	mg/L	HARDCAMG			20		18		19		25		15		20		18		14		24		44	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		14.3		15.8		14.5		17.0		13.8		16.3		20.0		16.6		17.7		14.5	
Zinc	µg/L	7440-66-6	120		32.1		32.4		29.1		33.6		27.6		28.1		32.6		31.3		27.5		27.1	
Dissolved Metals																								
Copper	µg/L	7440-50-8			1.3		1.2		1.0	U	1.6		3.0		3.8		3.3		1.3		1.3		3.4	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			13.8		14.9		14.8		15.0		14.3		15.6		15.0		15.7		17.2		13.6	
Zinc	µg/L	7440-66-6			25.1		23.4		24.3		28.6		25.9		23.2		21.5		21.4		22.7		20.2	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		6.76		7.01		6.82		7.23		7.20		6.98		7.63		6.96		7.67		7.58	
Dissolved Oxygen	mg/L	-	≥ 5		8.44		8.34		8.72		7.85		8.32		7.92		8.30		9.15		9.01		8.41	
Daily Flow Rate (b)	gpd	-			77,089		58,459		59,217		73,109		88,076		57,272		90,297		98,368		100,433		101,699	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Sample ID / Date	Permit Limits	Effluent VSP-4 2/9/2021		Effluent VSP-4 3/18/2021		Effluent VSP-4 4/27/2021		Effluent VSP-4 5/27/2021		Effluent VSP-4 6/24/2021		Effluent VSP-4 7/29/2021		Effluent VSP-4 8/31/2021		Effluent VSP-4 9/21/2021		Effluent VSP-4 10/7/2021		Effluent VSP-4 11/3/2021	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		NA		NA		NA		NA		NA		NA		NA		1.0	U	1.0	U
Acrolein	µg/L	107-02-8			NA		NA		NA		NA		NA		NA		NA		NA		5.0	U	5.0	U
Acrylonitrile	µg/L	107-13-1			NA		NA		NA		NA		NA		NA		NA		NA		5.0	U	5.0	U
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 2/9/2021		Effluent VSP-4 3/18/2021		Effluent VSP-4 4/27/2021		Effluent VSP-4 5/27/2021		Effluent VSP-4 6/24/2021		Effluent VSP-4 7/29/2021		Effluent VSP-4 8/31/2021		Effluent VSP-4 9/21/2021		Effluent VSP-4 10/7/2021		Effluent VSP-4 11/3/2021	
Total Metals and Hardness (EPA Method 200.8)																								
Calcium	µg/L	7440-70-2			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	µg/L	7440-50-8	13		4.7		3.5		3.0		2.3		1.0	U	2.7		5.9		3.2		1.0	U	7.3	
Hardness (Ca & Mg)	mg/L	HARDCAMG			21		23		21		20		20		7.4		19		25		24		23	
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	µg/L	7440-02-0	470		8.2		21.0		19.7		10.7		8.6		13.9		21.3		14.2		3.4		**995**	
Zinc	µg/L	7440-66-6	120		20.8		26.9		30.1		26.3		22.2		88.2		34.9		31.4		54.2		33.4	
Dissolved Metals																								
Copper	µg/L	7440-50-8			1.4		1.9		1.8		1.6		1.0	U	1.9		3.0		2.7		1.0	U	3.7	
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0			7.9		18.9		18.4		9.2		8.4		14.0		17.5		13.4		3.0		16.1	
Zinc	µg/L	7440-66-6			20	U	23.1		30.9		23.2		20	U	84.7		23.0		30.5		41.6		28.2	
Total Suspended Solids (SM 2540D)																								
Total Suspended Solids	mg/L	TSS			1.1		1.0	U	1.7		1.0	U	2.0		1.0	U	1.0	U	1.8		1.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																								
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																								
pH	SU	-	6.5 - 8.5		7.76		8.03		7.70		7.32		7.81		7.45		7.56		7.41		7.70		6.90	
Dissolved Oxygen	mg/L	-	≥ 5		7.80		8.11		7.52		7.88		7.89		7.20		10.88		8.76		11.25		14.33	
Daily Flow Rate (b)	gpd	-			92,706		103,848		104,287		92,458		53,993		11,266		4,680		59,040		78,445		23,608	
Nitrogen																								
Nitrogen, Total	lbs/qtr				NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 11/19/2021		Effluent VSP-4 12/29/2021		Effluent VSP-4 1/19/2022		Effluent VSP-4 2/9/2022		Effluent VSP-4 3/17/2022		Effluent VSP-4 4/12/2022		Effluent VSP-4 6/29/2022		Effluent VSP-4 8/24/2022		Effluent VSP-4 9/28/2022		Effluent VSP-4 10/20/2022	
Volatile Organic Compounds (EPA Method 624)																								
1,1,1-Trichloroethane	µg/L	71-55-6			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Acrolein	µg/L	107-02-8			NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Acrylonitrile	µg/L	107-13-1			NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Benzene	µg/L	71-43-2			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					NA		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
				Date	11/19/2021	12/29/2021	1/19/2022	2/9/2022	3/17/2022	4/12/2022	6/29/2022	8/24/2022	9/28/2022	10/20/2022
Total Metals and Hardness (EPA Method 200.8)														
Calcium	µg/L	7440-70-2			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	µg/L	7440-50-8	13		NA	4.2	4.8	4.1	1.1	1.8	5.0	6.9	1.5	6.7
Hardness (Ca & Mg)	mg/L	HARDCAMG			NA	21	28	18	21	22	22	22	18	23
Lead	µg/L	7439-92-1	65		NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.0 U
Magnesium	µg/L	7439-95-4			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	µg/L	7440-02-0	470		24.4	16.6	16.2	16.1	20.0	21.8	15.2	16.5	7.6	21.1
Zinc	µg/L	7440-66-6	120		NA	28.0	30.1	35.5	34.6	33.9	47.0	34.5	23.0	41.8
Dissolved Metals														
Copper	µg/L	7440-50-8			NA	2.0	2.6	2.3	1.0 U	1.0	3.0	3.8	1.0 U	2.1
Lead	µg/L	7439-92-1			NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nickel	µg/L	7440-02-0			16.2	13.4	16.3	14.9	19.4	21.6	13.1	15.0	7.0	18.5
Zinc	µg/L	7440-66-6			NA	20 U	24.7	29.4	32.9	32.0	36.7	21.4	21.4	28.1
Total Suspended Solids (SM 2540D)														
Total Suspended Solids	mg/L	TSS			NA	1.0 U	2.0 U	1.0 U	1.7	1.0 U	1.0 U	1.0 U	1.0 U	2.1 U
Biological Oxygen Demand (SM 5210B)														
Biological Oxygen Demand, 5 Day	mg/L	BOD5			NA	5.0 U	5.0 U	22.4	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Field Parameters														
pH	SU	-	6.5 - 8.5		NA	7.46	7.90	7.60	7.73	7.25	7.36	8.20	7.10	7.80
Dissolved Oxygen	mg/L	-	≥ 5		NA	11.37	8.14	7.70	6.55	8.12	5.88	8.13	9.37	10.18
Daily Flow Rate (b)	gpd	-			NA	15,039	95,197	87,402	77,231	86,248	566	39,459	59,608	87,997
Nitrogen														
Nitrogen, Total	lbs/qtr				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia (as N)	mg/L	7664-41-7			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organic Nitrogen (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

			Sample ID	Effluent VSP-4		Effluent VSP-4		Effluent VSP-4	
			Date	11/9/2022		11/30/2022		12/7/2022	
Analyte Name	**Units**	**Cas#**	**Permit Limits**						
Volatile Organic Compounds (EPA Method 624)									
1,1,1-Trichloroethane	µg/L	71-55-6		1.0	U	NA		1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		1.0	U	NA		1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		1.0	U	NA		1.0	U
1,1-Dichloroethane	µg/L	75-34-3		1.0	U	NA		1.0	U
1,1-Dichloroethene	µg/L	75-35-4		1.0	U	NA		1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		1.0	U	NA		1.0	U
1,2-Dichloroethane	µg/L	107-06-2		1.0	U	NA		1.0	U
1,2-Dichloropropane	µg/L	78-87-5		1.0	U	NA		1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		1.0	U	NA		1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		1.0	U	NA		1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		1.0	U	NA		1.0	U
Acrolein	µg/L	107-02-8		5.0	U	NA		5.0	U
Acrylonitrile	µg/L	107-13-1		5.0	U	NA		5.0	U
Benzene	µg/L	71-43-2		1.0	U	NA		1.0	U
Bromodichloromethane	µg/L	75-27-4		1.0	U	NA		1.0	U
Bromoform	µg/L	75-25-2		1.0	U	NA		1.0	U
Bromomethane	µg/L	74-83-9		1.0	U	NA		1.0	U
Carbon Tetrachloride	µg/L	56-23-5		1.0	U	NA		1.0	U
Chlorobenzene	µg/L	108-90-7		1.0	U	NA		1.0	U
Chloroethane	µg/L	75-00-3		1.0	U	NA		1.0	U
Chloroform	µg/L	67-66-3		1.0	U	NA		1.0	U
Chloromethane	µg/L	74-87-3		1.0	U	NA		1.0	U
Dibromochloromethane	µg/L	124-48-1		1.0	U	NA		1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		1.0	U	NA		1.0	U
Ethylbenzene	µg/L	100-41-4		1.0	U	NA		1.0	U
Methylene Chloride	µg/L	75-09-2		1.0	U	NA		1.0	U
Tetrachloroethylene	µg/L	127-18-4		1.0	U	NA		1.0	U
Toluene	µg/L	108-88-3		1.0	U	NA		1.0	U
Trichloroethene	µg/L	79-01-6		1.0	U	NA		1.0	U
Trichlorofluoromethane	µg/L	75-69-4		1.0	U	NA		1.0	U
Vinyl Chloride	µg/L	75-01-4		1.0	U	NA		1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		1.0	U	NA		1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		1.0	U	NA		1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		1.0	U	NA		1.0	U
TOTAL VOCs:				ND		NA		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID / Date	Effluent VSP-4 11/9/2022		Effluent VSP-4 11/30/2022	Effluent VSP-4 12/7/2022	
Total Metals and Hardness (EPA Method 200.8)									
Calcium	µg/L	7440-70-2			NA		NA	NA	
Copper	µg/L	7440-50-8	13		9.5		3.4	5.5	
Hardness (Ca & Mg)	mg/L	HARDCAMG			21		NA	23	
Lead	µg/L	7439-92-1	65		1.0	U	NA	1.0	U
Magnesium	µg/L	7439-95-4			NA		NA	NA	
Nickel	µg/L	7440-02-0	470		20.4		NA	14.9	
Zinc	µg/L	7440-66-6	120		41.8		NA	30.9	
Dissolved Metals									
Copper	µg/L	7440-50-8			6.0		NA	4.1	
Lead	µg/L	7439-92-1			1.0	U	NA	1.0	U
Nickel	µg/L	7440-02-0			17.3		NA	16.6	
Zinc	µg/L	7440-66-6			40.1		NA	31.3	
Total Suspended Solids (SM 2540D)									
Total Suspended Solids	mg/L	TSS			1.0	U	NA	2.2	U
Biological Oxygen Demand (SM 5210B)									
Biological Oxygen Demand, 5 Day	mg/L	BOD5			2.0	U	NA	2	U
Field Parameters									
pH	SU	-	6.5 - 8.5		6.79		NA	6.60	
Dissolved Oxygen	mg/L	-	≥ 5		8.70		NA	8.40	
Daily Flow Rate (b)	gpd	-			94,584		NA	90,807	
Nitrogen									
Nitrogen, Total	lbs/qtr				NA		NA	NA	
Ammonia (as N)	mg/L	7664-41-7			NA		NA	NA	
Nitrate (as N)	mg/L	7727-37-9			NA		NA	NA	
Nitrite (as N)	mg/L	7727-37-9			NA		NA	NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA		NA	NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA		NA	NA	

Notes:
a/ EPA = US Environmental Protection Agency; SM = Standard Method; VOC = volatile organic compound; µg/L = micrograms per liter; mg/L = milligrams per liter; U = not detected above the method detection limit; ND = non-detected sum; NA = compound not analyzed; SU = Standard Units; gpd = gallons per day; lbs/qtr = pounds per quarter; N = Nitrogen.
Results shown in highlight and **bold** exceed the NPDES Permit limit.
b/ Daily Flow Rate determined by average of gallons processed per day per monitoring window.
c/ Nitrogen parameters no longer analyzed after the first quarter 2018 per Maryland Department of the Environment correspondence dated March 30, 2018.

Table 3

Historical Effluent Results - 1,4-Dioxane
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 03/13/2017 (c)	Effluent VSP-4 03/14/2017	Effluent VSP-4 3/15/2017	Effluent VSP-4 3/20/2017 (c)	Effluent VSP-4 3/23/2017	Effluent VSP-4 4/3/2017 (c)	Effluent VSP-4 4/12/2017	Effluent VSP-4 4/19/2017
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 5/8/2017 (c)	Effluent VSP-4 6/21/2017 (c)	Effluent VSP-4 7/10/2017 (c)	Effluent VSP-4 8/3/2017 (c)	Effluent VSP-4 9/11/2017 (c)	Effluent VSP-4 10/09/2017 (c)	Effluent VSP-4 10/12/2017	Effluent VSP-4 10/23/2017
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 10/26/2017	Effluent VSP-4 11/7/2017 (c)	Effluent VSP-4 12/11/2017 (c)	Effluent VSP-4 1/10/2018 (c)	Effluent VSP-4 2/07/2018 (c)	Effluent VSP-4 3/19/2018 (c)	Effluent VSP-4 4/17/2018 (c)	Effluent VSP-4 5/8/2018 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	1.0 U	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 6/5/2018 (c)	Effluent VSP-4 7/12/2018 (c)	Effluent VSP-4 8/8/2018 (c)	Effluent VSP-4 9/6/2018 (c)	Effluent VSP-4 9/10/2018	Effluent VSP-4 9/17/2018	Effluent VSP-4 9/17/2018	Effluent VSP-4 10/3/2018 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.9	1.6	1.7	4.6	4.8	3.8	1.7

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 11/6/2018 (c)	Effluent VSP-4 11/30/2018	Effluent VSP-4 12/6/2018 (c)	Effluent VSP-4 12/12/2018	Effluent VSP-4 1/8/2019 (c)	Effluent VSP-4 2/5/2019 (c)	Effluent VSP-4 3/7/2019 (c)	Effluent VSP-4 4/2/2019
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.1	2.9	1.3	1.6	11.0	1.7

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 4/4/2019 (c)	Effluent VSP-4 5/8/2019 (c)	Effluent VSP-4 6/12/2019 (c)	Effluent VSP-4 7/2/2019 (c)	Effluent VSP-4 8/1/2019 (c)	Effluent VSP-4 9/4/2019 (c)	Effluent VSP-4 10/16/2019 (c)	Effluent VSP-4 11/4/2019 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	10.0	5.6	**37**	1.0 U	1.0 U	7.0	7.6	12.0

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 12/2/2019 (c)	Effluent VSP-4 1/9/2020 (c)	Effluent VSP-4 2/4/2020 (c)	Effluent VSP-4 3/24/2020 (c)	Effluent VSP-4 4/7/2020 (c)	Effluent VSP-4 5/28/2020 (c)	Effluent VSP-4 6/29/2020 (c)	Effluent VSP-4 7/30/2020 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	12.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.7	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 8/26/2020 (c)	Effluent VSP-4 9/28/2020 (c)	Effluent VSP-4 10/26/2020 (c)	Effluent VSP-4 11/12/2020 (c)	Effluent VSP-4 12/3/2020 (c)	Effluent VSP-4 12/15/2020	Effluent VSP-4 1/13/2021 (c)	Effluent VSP-4 2/9/2021 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	6.3	2.0	**43**	2.0	2.2	13.0	1.1

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 3/18/2021 (c)	Effluent VSP-4 4/27/2021 (c)	Effluent VSP-4 5/27/2021 (c)	Effluent VSP-4 6/24/2021 (c)	Effluent VSP-4 7/29/2021 (c)	Effluent VSP-4 8/31/2021 (c)	Effluent VSP-4 9/21/2021 (c)	Effluent VSP-4 10/7/2021 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.5	1.2	1.0 U	1.0 U	8.3	1.0 U	1.0 U	1.0 U

Table 3

Historical Effluent Results - 1,4-Dioxane
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 11/3/2021 (c)	Effluent VSP-4 12/29/2021 (c)	Effluent VSP-4 1/19/2022 (c)	Effluent VSP-4 2/9/2022 (c)	Effluent VSP-4 3/17/2022 (c)	Effluent VSP-4 4/12/2022 (c)	Effluent VSP-4 6/29/2022 (c)	Effluent VSP-4 8/24/2022 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.8	3.0	1.0 U	1.0 U	1.0	1.0 U

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4 9/28/2022 (c)	Effluent VSP-4 10/20/2022 (c)	Effluent VSP-4 11/9/2022 (c)	Effluent VSP-4 12/7/2022 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)						
1,4-Dioxane	71-55-6	15	1.0 U	2.9	3.4	6.6

Notes:
a/ EPA = US Environmental Protection Agency; SIM = Selected Ion Monitoring; U = not detected above the method detection limit.
All concentrations are in micrograms per liter (µg/L).
Results shown in highlight and **bold** exceed the cleanup goal.
b/ Numeric cleanup standard from Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.
c/ VOCs were analyzed by Method 624 to fulfill the NPDES Permit requirement. See Table 2 for results.

Table 4

Total Residual Chlorine Discharge Monitoring
Former Kop-Flex Facility
Hanover, Maryland (a)

Date	TRC (mg/L) (b)
2/15/2022	0.04
4/12/2022	0.00
8/24/2022	0.02
9/28/2022	0.01
10/20/2022	0.00
11/9/2022	0.03
12/7/2022	0.10

Notes:

a/ TRC = total residual chlorine; mg/L = milligrams per liter.

b/ The values represent readings from a Hach field colorimeter. The accuracy of the colorimeter readings is +/- 0.02 mg/L.

Table 5

Summary of System Discharge and Mass Removal
Former Kop-Flex Facility
Hanover, Maryland (a)

Year	Month	Total Discharged Volume Gals	Water Flow Rate (b) GPM AVG	Estimated VOCs Removed Mass lbs	Estimated VOCs Removed Volume Gals	Estimated 1,4-Dioxane Removed Mass lbs	Estimated 1,4-Dioxane Removed Volume Gals
2017	*Total*	*26,606,357*	*61.5*	*86.0*	*8.5*	*42.7*	*5.0*
2018	*Total*	*33,390,900*	*67.5*	*111.1*	*11.0*	*41.3*	*4.8*
2019	*Total*	*33,566,025*	*69.9*	*95.0*	*9.4*	*36.3*	*4.2*
2020	*Total*	*27,711,625*	*70.5*	*68.1*	*6.8*	*31.5*	*3.7*
2021	*Total*	*22,454,076*	*69.7*	*45.8*	*4.5*	*19.7*	*2.3*
2022	January	2,951,116	68.5	6.58	0.65	2.42	0.28
	February	2,447,251	66.8	5.45	0.54	1.98	0.23
	March	2,394,169	63.9	5.33	0.53	2.00	0.23
	April	2,587,442	65.4	5.77	0.57	2.16	0.25
	May	0	0.0	0.00	0.00	0.00	0.00
	June	16,989	0.0	0.03	0.00	0.01	0.00
	July	0	0.0	0.00	0.00	0.00	0.00
	August	1,223,223	70.1	3.29	0.33	1.53	0.18
	September	1,788,232	70.8	4.81	0.48	2.24	0.26
	October	2,727,909	71.1	6.97	0.69	2.67	0.31
	November	2,837,510	70.2	7.25	0.72	2.76	0.32
	December	2,815,023	69.1	7.19	0.71	2.66	0.31
2022	*Total*	*21,788,865*	*68.4*	*52.6*	*5.2*	*20.4*	*2.4*
Historical Average (c)		***28,745,797***	***67.8***	***81.2***	***8.1***	***34.3***	***4.0***
Cumulative		**165,517,848**	**--**	**458.6**	**45.5**	**191.9**	**22.3**

Notes:
a/ GPM = gallons per minute; AVG = average; lbs = pounds; gals = gallons.
b/ Average water flow rate in GPM is based on fully operational days only.
Flow rates from May, June, and July 2022 were not used in the calculation of the total average flow rate for 2022 as the System was nonoperational for the entirety of May and July and the vast majority of June.
c/ Historical averages calculated using values from 2017 through 2021.

Table 6

Summary of Recovery Well Flow Rates
Former Kop-Flex Facility
Hanover, Maryland (a)

Year	Month	Average Recovery Well Flow Rates					
		RW-1S	RW-2S	RW-3S	RW-1D	RW-2D	Total
2018	*Total*	*4.5*	*1.8*	*2.4*	*28.4*	*28.7*	*65.8*
2019	*Total*	*4.9*	*1.7*	*1.4*	*28.5*	*29.3*	*65.8*
2020	*Total*	*4.2*	*2.0*	*1.8*	*21.7*	*24.4*	*54.1*
2021	*Total*	*3.0*	*1.6*	*1.6*	*18.1*	*19.1*	*43.5*
2022	January	5.0	2.3	2.3	29.0	29.2	*67.7*
	February	4.5	2.0	2.1	25.8	25.8	*60.3*
	March	1.3	1.9	2.0	23.6	23.5	*52.4*
	April	1.6	2.2	2.5	27.6	29.6	*63.6*
	May	0.0	0.0	0.0	0.0	0.0	*0.0*
	June	0.0	0.0	0.0	0.0	0.0	*0.0*
	July	0.0	0.0	0.0	0.0	0.0	*0.0*
	August	0.5	0.4	0.2	2.8	3.5	*7.5*
	September	2.4	2.4	0.0	16.1	17.1	*38.1*
	October	4.2	4.0	0.0	22.1	30.0	*60.2*
	November	3.1	3.4	0.0	26.7	30.5	*63.8*
	December	3.6	1.7	0.0	28.6	29.3	*63.3*
2022	*Total*	*2.2*	*1.7*	*0.8*	*16.9*	*18.2*	*39.7*
Historical Average (b)		***4.1***	***1.8***	***1.8***	***24.2***	***25.4***	***57.3***

Notes:
a/ Flow rates are listed in gallons per minute (GPM).
b/ Historical averages calculated using values from 2018 through 2021.

Table 7

Summary of Recovery Well Volumes
Former Kop-Flex Facility
Hanover, Maryland (a)

Year	Month	Summary of Recovery Well Total Volumes by Month					
		RW-1S	**RW-2S**	**RW-3S**	**RW-1D**	**RW-2D**	**Total**
2017	*Total*	*1.66*	*1.32*	*1.01*	*10.63*	*12.22*	*26.82*
2018	*Total*	*2.35*	*0.94*	*1.26*	*14.94*	*15.10*	*34.59*
2019	*Total*	*2.49*	*0.89*	*0.72*	*14.61*	*15.05*	*33.76*
2020	*Total*	*2.21*	*1.04*	*0.93*	*11.33*	*12.85*	*28.37*
2021	*Total*	*1.60*	*0.86*	*0.85*	*9.33*	*10.10*	*22.74*
2022	January	0.24	0.11	0.11	1.38	1.39	3.22
	February	0.15	0.07	0.07	0.86	0.85	2.00
	March	0.05	0.07	0.08	0.88	0.88	1.96
	April	0.08	0.11	0.13	1.39	1.49	3.20
	May	0.00	0.00	0.00	0.00	0.00	0.00
	June	0.00	0.00	0.00	0.00	0.00	0.00
	July	0.00	0.00	0.00	0.00	0.00	0.00
	August	0.09	0.08	0.04	0.51	0.64	1.36
	September	0.10	0.10	0.00	0.65	0.69	1.54
	October	0.18	0.17	0.00	0.96	1.29	2.60
	November	0.13	0.14	0.00	1.08	1.23	2.57
	December	0.17	0.08	0.00	1.36	1.39	3.01
2022	*Total*	*1.19*	*0.92*	*0.42*	*9.06*	*9.86*	*21.45*
Percentage of Total 2022 Flow		6%	4%	2%	42%	46%	--
Historical Average (b)		***2.06***	***1.01***	***0.95***	***12.17***	***13.06***	***29.26***
Cumulative		**11.50**	**5.97**	**5.19**	**69.90**	**75.18**	**167.74**

Notes:
a/ Volumes of water are listed in millions of gallons.
b/ Historical averages calculated using values from 2017 through 2021.

Table 8

2022 Recovery Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

		Shallow Wells						Deep Wells			
	Well ID:	**RW-1S**		**RW-2S**		**RW-3S**		**RW-1D**		**RW-2D**	
	Date Sampled:	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**										
VOCs											
Acetone	1,400	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.3	10.0 U	10.0 U	10.0 U	10.0 U
Chloroethane	2,100	17.9	20.4	1.0 U	1.7	1.0 U	1.0 U	6.2	8.2	1.0 U	1.0 U
1,1-Dichloroethane	2.8	**144**	**150**	**133**	**71.2**	**3.1**	2.1	**59.9**	**68.6**	**27.1**	**20.4**
1,2-Dichloroethane	5	2.4	2.3	1.0 U	1.0 U	1.0 U	1.0 U	1.7	1.9	1.3	1.2
1,1-Dichloroethene	7	**537**	**523**	**726**	**393**	5.8	2.2	**242**	**237**	**125**	**123**
cis-1,2-Dichloroethene	70	2.9	2.9	1.0 U	1.0 U	1.0 U	1.0 U	2.3	2.8	1.0 U	1.0 U
1,4-Dioxane	15 (c)	**136**	**158**	**276**	**172**	5.9	5.4	**36.2**	**40.2**	**39.2**	**40.0**
Methylene Chloride	5	1.0 U	1.0 U	**10.3**	2.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200	75.4	49.0	**800**	**238**	7.8	4.6	8.3	8.1	5.4	4.2
Toluene	1,000	1.0 U	1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	3.7	3.7	**9.8**	4.4	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.0 U
Vinyl chloride	2	**5.3**	**5.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

a/ VOC = volatile organic compound; U = not detected above the method detection limit.
Only detected VOC concentrations are provided.
All concentrations are in micrograms per liter (µg/L).
Results shown in **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020:
https://mde.maryland.gov/programs/land/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

c/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

Table 9

Historical Recovery Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a, b)

Well ID	Zone	Sample Date	VOCs (µg/L) 1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			**2.8**	**7**	**15 (d)**
RW-1S	**Shallow**	*12/7/2016*	**468**	**957**	**1,420**
		5/1/2017	**711**	**1,210**	**1,370**
		8/31/2017	**192**	**434**	**586**
		11/14/2017	**196**	**544**	**580**
		5/30/2018	**93**	**381**	**377**
		11/7/2018	**105**	**458**	**467**
		5/21/2019	**89.1**	**384**	**374**
		11/19/2019	**77.4**	**348**	**299**
		5/13/2020	**98.2**	**447**	**298**
		11/22/2020	**81.2**	**344**	**351**
		5/9/2021	**113**	**389**	**291**
		12/29/2021	**99.4**	**368**	**294**
		6/26/2022	**144**	**537**	**136**
		11/20/2022	**150**	**523**	**158**
RW-2S	**Shallow**	*12/6/2016*	**198**	**971**	**1,190**
		5/1/2017	**95.7**	**622**	**949**
		8/31/2017	**71.7**	**390**	**482**
		11/14/2017	**83.5**	**401**	**549**
		5/30/2018	**33.0**	**203**	**200**
		11/7/2018	**29.1**	**177**	**200**
		5/21/2019	**36.5**	**244**	**448**
		11/19/2019	**22.4**	**132**	**111**
		5/13/2020	**24.9**	**140**	**99.8**
		11/22/2020	**18.6**	**129**	**97.0**
		5/9/2021	**32.4**	**184**	**153**
		12/29/2021	**32.7**	**184**	**207**
		6/26/2022	**133**	**726**	**276**
		11/20/2022	**71.2**	**393**	**172**
RW-3S	**Shallow**	*12/6/2016*	**4.6**	**7.2**	5.9
		5/1/2017	1.0 U	1.2	3.8
		8/31/2017	1.0 U	1.7	5.9
		11/14/2017	1.8	1.8	10.6
		5/30/2018	1.9	2.6	10.4
		11/7/2018	2.1	2.6	12.4
		5/21/2019	2.1	2.7	**15.2**
		11/19/2019	**2.9**	4.7	**16.6**
		5/12/2020	**3.4**	5.9	**17.2**
		11/22/2020	**2.8**	4.2	13.8
		5/9/2021	2.7	4.2	13.2
		12/29/2021	2.3	3.2	11.1
		6/26/2022	**3.1**	5.8	5.9
		11/20/2022	2.1	2.2	5.4

Table 9

Historical Recovery Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a, b)

Well ID	Zone	Sample Date	VOCs (µg/L) 1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			**2.8**	**7**	**15 (d)**
RW-1D	**Deep**	*12/6/2016*	**4.4**	**39.3**	**34.4**
		5/1/2017	**10.4**	**88.9**	**51.9**
		8/31/2017	**15.7**	**99.7**	**52.8**
		11/14/2017	**30.4**	**174**	**65.5**
		5/30/2018	**77.1**	**392**	**139**
		11/7/2018	**78.1**	**363**	**155**
		5/21/2019	**50.8**	**224**	**112**
		11/19/2019	**49.9**	**240**	**89.7**
		5/12/2020	**48.4**	**202**	**81.8**
		11/22/2020	**42.0**	**179**	**90.9**
		5/9/2021	**52.4**	**204**	**77.7**
		12/29/2021	**51.4**	**202**	**83.7**
		6/26/2022	**59.9**	**242**	**36.2**
		11/20/2022	**68.6**	**237**	**40.2**
RW-2D	**Deep**	*12/6/2016*	**64.0**	**257**	**206**
		5/1/2017	**56.6**	**486**	**214**
		8/31/2017	**42.4**	**306**	**149**
		11/14/2017	**44.0**	**295**	**172**
		5/30/2018	**24.9**	**175**	**106**
		11/7/2018	**25.4**	**185**	**99.8**
		5/21/2019	**16.9**	**115**	**72.7**
		11/19/2019	**21.6**	**149**	**85.5**
		5/12/2020	**21.4**	**145**	**78.2**
		11/22/2020	**17.9**	**131**	**74.5**
		5/9/2021	**16.8**	**104**	**62.8**
		12/29/2021	**20.2**	**120**	**85.1**
		6/26/2022	**27.1**	**125**	**39.2**
		11/20/2022	**20.4**	**123**	**40.0**

a/ Select constituents are presented; see Appendix B for complete analytical data.

b/ VOCs = volatile organic compounds; µg/L = micrograms per liter; 1,1-DCA = 1,1-dichloroethane; 1,1-DCE = 1,1-dichloroethene; U = compound not detected above reported limit.
Results shown in **bold** exceed the cleanup standard.

c/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/land/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil20and20Groundwater20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

d/ Numeric cleanup standards from WSP's October 2, 2015, Response Action Plan, Revision 2.

Table 10

Comparison of Yield Test Results for Groundwater Recovery Wells
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	SEPTEMBER 2016 (BASELINE) YIELD TEST (b)			JUNE 2022 (PRE-REHAB) YIELD TEST (c)			Relative Percent Difference in Specific Capacity (d)	JULY/AUGUST 2022 (POST-REHAB) YIELD TEST (b)			Relative Percent Difference in Specific Capacity (d)
	Pumping Rate (GPM)	Drawdown (FT)	Specific Capacity (GPM/FT)	Pumping Rate (GPM)	Drawdown (FT)	Specific Capacity (GPM/FT)		Pumping Rate (GPM)	Drawdown (FT)	Specific Capacity (GPM/FT)	
RW-1S	4.5	5.3	0.85	4.2	10.8	0.39	-54	5.1	5.46	0.93	10
RW-2S	4.5	11.8	0.38	2.8	22.5	0.12	-67	3.9	11.50	0.34	-12
RW-3S	4.5	6.9	0.65	3.5	17.6	0.20	-70	3.1	12.22	0.25	-61
RW-1D	25	14.6	1.71	26.1	11.9	2.19	28	NA	NA	NA	NA
RW-2D	25	19.7	1.27	25.8	18.9	1.37	8	NA	NA	NA	NA

a/ FT = feet; GPM = gallons per minute; NA = not assessed.

b/ Drawdown in RWs determined from water level measurements in the co-located piezometers.

c/ Drawdown in shallow RWs determined from water level measurements in the co-located piezometers.
Drawdown in RW-1D determined from pressure transducer placed in the co-located piezometer.
Drawdown in RW-2D determined from pressure transducer inside the well casing due to a problem with lowering the water level indicator down the co-located piezometer.

d/ Relative Percent Difference = (2022 SC - Sept 2016 SC)/Sept 2016 SC

Table 11

Well Construction
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Installation Date	Well Diameter (inches)	TOC Elevation (ft amsl)	Total Depth (ft btoc)	Screen Length / Open Borehole (feet)	Screen Interval Depth (ft btoc)	Screen Interval Elevation (ft amsl)
Shallow Zone							
MW-01	03/30/96	2	113.6	36	10.0	26.0 - 36.0	87.60 - 77.60
MW-03	04/01/96	2	113.6	21.7	10.0	11.7 - 21.7	101.90 - 91.90
MW-04	04/02/96	2	124.4	34.3	10.0	24.3 - 34.3	100.10 - 90.10
MW-04R	09/13/22	2	125.4	40	10.0	30.0 - 40.0	95.40 85.40
MW-05R	09/13/16	2	123.5	33	10.0	23.0 - 33.0	100.50 - 90.50
MW-09	12/10/96	2	125.1	25	10.0	15.0 - 25.0	110.10 - 100.10
MW-16	08/2010	2	124.0	50.2	10.0	40.2 - 50.2	83.80 - 73.80
MW-18	11/30/11	2	125.1	58.3	10.0	48.3 - 58.3	76.80 - 66.80
MW-20	11/29/11	2	125.4	50	5.0	45.0 - 50.0	80.40 - 75.40
MW-38R	09/13/16	2	125.4	33.3	10.0	23.3 - 33.3	102.10 - 92.10
MW-39	04/04/14	2	124.6	54	10.0	44.0 - 54.0	80.60 - 70.60
MW-42	09/13/16	2	125.9	33.2	10.0	23.2 - 33.2	102.70 - 92.70
MW-43	09/14/16	2	122.8	47.5	10.0	37.5 - 47.5	85.30 - 75.30
MW-44	09/15/16	2	127.1	42.8	10.0	32.8 - 42.8	94.30 - 84.30
Deep Zone							
MW-01D	12/03/11	2	129.4	112.2	10.0	102.2 - 112.2	27.20 - 17.20
MW-16D	12/19/10	2	124.1	100.2	10.0	90.2 - 100.2	33.90 - 23.90
MW-21D	03/22/12	2	126.3	106	10.0	96.0 - 106.0	30.30 - 20.30
MW-22D	03/23/12	2	128.9	114.9	10.0	104.9 - 114.9	24.00 - 14.00
MW-23D	03/21/12	2	125.2	95	10.0	85.0 - 95.0	40.20 - 30.20
MW-27D	08/27/13	2	117.2	117.3	10.0	107.3 - 117.3	9.90 - -0.10
MW-40D	09/21/16	2	124.1	95.8	10.0	85.8 - 95.8	38.30 - 28.30
MW-41D	09/23/16	2	127.1	164	10.0	154.0 - 164.0	-26.90 - -36.90
RECOVERY WELL PIEZOMETERS							
Shallow Zone							
RW-1S	09/12/16	1	122.9	62	35.0	27.0 - 62.0	95.90 - 60.90
RW-2S	09/11/16	1	123.5	60.5	35.0	25.5 - 60.5	98.00 - 63.00
RW-3S	09/11/16	1	125.4	62	35.0	27.0 - 62.0	98.40 - 63.40
Deep Zone							
RW-1D	09/09/16	1	126.9	126	40.0	86.0 - 126.0	40.90 - 0.90
RW-2D	08/31/16	1	127.4	145.6	40.0	105.6 - 145.6	21.80 - -18.20

Notes:
a/ TOC = top of casing; ft amsl = feet above mean sea level; ft btoc = feet below top of casing.

Table 12

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	12/7/2016 (b)		2/1/2017 (b)		3/21/2017		4/7/2017		4/10/2017		4/13/2017		4/17/2017	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	NM	-	15.98	113.82	16.16	113.64	15.93	113.87	15.95	113.85	15.94	113.86	15.90	113.90
MW-03	Shallow	113.6	6.78	106.82	6.83	106.77	6.79	106.81	6.41	107.19	6.76	106.84	6.91	106.69	6.90	106.70
MW-04	Shallow	124.4	12.28	112.12	11.14	113.26	11.17	113.23	11.05	113.35	11.09	113.31	11.06	113.34	11.13	113.27
MW-04R	Shallow	127.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-05R	Shallow	123.5	15.87	107.63	13.49	110.01	15.98	107.52	16.15	107.35	16.38	107.12	16.45	107.05	16.47	107.03
MW-09	Shallow	125.1	10.84	114.26	11.30	113.80	11.51	113.59	11.41	113.69	11.41	113.69	11.51	113.59	11.48	113.62
MW-16	Shallow	124.0	10.92	113.08	11.12	112.88	11.66	112.34	11.74	112.26	11.81	112.19	11.82	112.18	12.08	111.92
MW-18	Shallow	125.1	20.77	104.33	20.84	104.26	22.85	102.25	22.85	102.25	23.11	101.99	23.18	101.92	23.19	101.91
MW-20	Shallow	125.4	NM	-	12.24	113.16	12.5	112.90	12.33	113.07	12.31	113.09	12.3	113.10	13.38	112.02
MW-38R	Shallow	125.4	15.58	109.82	15.76	109.64	19.64	105.76	19.6	105.80	20.81	104.59	19.81	105.59	19.84	105.56
MW-39	Shallow	124.6	NM	-	20.96	103.64	22.64	101.96	22.55	102.05	21.86	102.74	23	101.60	23.01	101.59
MW-42	Shallow	125.9	16.18	109.72	16.26	109.64	19.28	106.62	19.33	106.57	19.52	106.38	19.49	106.41	19.55	106.35
MW-43	Shallow	122.8	19.25	103.55	19.31	103.49	20.68	102.12	20.31	102.49	20.61	102.19	21.81	100.99	20.92	101.88
MW-44	Shallow	127.1	14.93	112.17	15.25	111.85	17.7	109.40	17.08	110.02	17.18	109.92	17.35	109.75	17.23	109.87
MW-45	Shallow	126.7	NM	-	NM	-	14.1	112.62	13.85	112.87	13.85	112.87	13.85	112.87	13.75	112.97
RW-1S	Shallow	122.9	12.96	109.94	13.17	109.73	12.96	109.94	20.36	102.54	20.6	102.30	20.56	102.34	20.60	102.30
RW-2S	Shallow	123.5	14.12	109.38	14.02	109.48	28.55	94.95	28.88	94.62	29.81	93.69	29	94.50	29.14	94.36
RW-3S	Shallow	125.4	14.29	111.11	14.24	111.16	20.34	105.06	23.49	101.91	23.59	101.81	23.69	101.71	23.73	101.67
MW-01D	Deep	129.4	42.81	86.59	42.22	87.18	56.15	73.25	56.06	73.34	56.22	73.18	56.44	72.96	56.37	73.03
MW-16D	Deep	124.1	34.91	89.19	34.72	89.38	37.55	86.55	37.6	86.50	38.02	86.08	38.1	86.00	37.94	86.16
MW-21D	Deep	126.3	37.8	88.50	37.59	88.71	47.12	79.18	47.26	79.04	47.57	78.73	47.61	78.69	47.58	78.72
MW-22D	Deep	128.9	40.78	88.07	40.49	88.36	43.28	85.57	43.3	85.55	43.59	85.26	43.76	85.09	43.73	85.12
MW-23D	Deep	125.2	35.14	90.06	34.74	90.46	36.33	88.87	36.29	88.91	36.72	88.48	36.81	88.39	36.61	88.59
MW-24D	Deep	129.1	46.3	82.80	45.73	83.37	47.44	81.66	47.71	81.39	48	81.10	48.16	80.94	48.29	80.81
MW-27D	Deep	117.2	29.66	87.54	26.78	90.42	27.73	89.47	27.68	89.52	28.18	89.02	28.3	88.90	28.03	89.17
MW-40D	Deep	124.1	35.14	88.96	34.94	89.16	37.19	86.91	37.51	86.59	37.98	86.12	37.98	86.12	37.85	86.25
MW-41D	Deep	127.1	41.98	85.12	41.44	85.66	44.00	83.10	44.06	83.04	44.48	82.62	44.56	82.54	44.43	82.67
MW-46D	Deep	124.8	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
RW-1D	Deep	126.9	38.53	88.37	38.19	88.71	58.69	68.21	59.02	67.88	59.06	67.84	59.02	67.88	59.26	67.64
RW-2D	Deep	127.4	42.31	85.09	41.62	85.78	68.82	58.58	68.51	58.89	68.39	59.01	68.78	58.62	68.63	58.77

Table 12

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	5/1/2017		5/8/2017		8/31/2017		10/25/2017		11/14/2017		5/30/2018		11/7/2018	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	15.92	113.88	15.81	113.99	15.49	114.31	NA	NA	14.17	115.63	15.52	114.28	13.99	115.81
MW-03	Shallow	113.6	6.96	106.64	6.87	106.73	7.59	106.01	NA	NA	7.27	106.33	7.17	106.43	6.43	107.17
MW-04	Shallow	124.4	10.95	113.45	10.91	113.49	10.66	113.74	NA	NA	10.97	113.43	10.19	114.21	9.16	115.24
MW-04R	Shallow	127.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-05R	Shallow	123.5	16.60	106.90	16.60	106.90	16.90	106.60	NA	NA	16.78	106.72	15.89	107.61	15.51	107.99
MW-09	Shallow	125.1	11.41	113.69	11.34	113.76	11.09	114.01	NA	NA	NA	NA	10.78	114.32	9.16	115.94
MW-16	Shallow	124.0	11.99	112.01	11.81	112.19	11.90	112.10	NA	NA	12.00	112.00	11.76	112.24	10.96	113.04
MW-18	Shallow	125.1	23.30	101.80	23.28	101.82	24.63	100.47	NA	NA	24.41	100.69	23.80	101.30	23.13	101.97
MW-20	Shallow	125.4	13.01	112.39	12.24	113.16	12.39	113.01	NA	NA	11.98	113.42	12.15	113.25	11.74	113.66
MW-38R	Shallow	125.4	19.94	105.46	19.96	105.44	20.16	105.24	NA	NA	19.93	105.47	19.35	106.05	18.67	106.73
MW-39	Shallow	124.6	23.05	101.55	23.00	101.60	24.51	100.09	NA	NA	23.93	100.67	23.72	100.88	23.09	101.51
MW-42	Shallow	125.9	19.68	106.22	19.67	106.23	19.95	105.95	NA	NA	19.82	106.08	19.16	106.74	18.55	107.35
MW-43	Shallow	122.8	21.11	101.69	20.90	101.90	21.73	101.07	NA	NA	21.66	101.14	20.47	102.33	20.60	102.20
MW-44	Shallow	127.1	17.31	109.79	17.27	109.83	17.18	109.92	NA	NA	17.00	110.10	16.32	110.78	15.78	111.32
MW-45	Shallow	126.7	13.67	113.05	13.60	113.12	13.20	113.52	NA	NA	13.80	112.92	12.98	113.74	12.00	114.72
RW-1S	Shallow	122.9	20.80	102.10	20.79	102.11	21.49	101.41	NA	NA	21.98	100.92	22.88	100.02	23.97	98.93
RW-2S	Shallow	123.5	29.61	93.89	29.74	93.76	32.10	91.40	NA	NA	30.76	92.74	28.37	95.13	27.48	96.02
RW-3S	Shallow	125.4	24.32	101.08	24.46	100.94	26.20	99.20	NA	NA	28.47	96.93	26.91	98.49	24.39	101.01
MW-01D	Deep	129.4	56.40	73.00	56.29	73.11	56.70	72.70	58.17	71.23	58.09	71.31	58.03	71.37	57.22	72.18
MW-16D	Deep	124.1	37.98	86.12	38.08	86.02	41.1	83.00	40.71	83.39	40.63	83.47	40.37	83.73	39.33	84.77
MW-21D	Deep	126.3	47.54	78.76	47.61	78.69	56.7	69.60	50.61	75.69	50.53	75.77	50.38	75.92	49.61	76.69
MW-22D	Deep	128.9	43.82	85.03	43.81	85.04	46.71	82.14	46.74	82.11	46.25	82.60	46.30	82.55	44.80	84.05
MW-23D	Deep	125.2	36.71	88.49	36.77	88.43	39.9	85.30	39.21	85.99	39.04	86.16	38.87	86.33	37.72	87.48
MW-24D	Deep	129.1	48.35	80.75	48.37	80.73	55.82	73.28	52.15	76.95	51.99	77.11	50.94	78.16	50.72	78.38
MW-27D	Deep	117.2	28.21	88.99	28.21	88.99	31.11	86.09	30.52	86.68	30.34	86.86	30.20	87.00	29.17	88.03
MW-40D	Deep	124.1	38.01	86.09	38.04	86.06	41.00	83.10	40.75	83.35	40.50	83.60	40.44	83.66	39.60	84.50
MW-41D	Deep	127.1	44.61	82.49	44.62	82.48	49.18	77.92	47.94	79.16	47.71	79.39	47.56	79.54	46.56	80.54
MW-46D	Deep	124.8	NM	-	NM	-	NM	-	NM	-	NM	-	37.37	87.40	32.65	92.12
RW-1D	Deep	126.9	58.88	68.02	58.99	67.91	60.23	66.67	62.62	64.28	63.62	63.28	62.75	64.15	62.97	63.93
RW-2D	Deep	127.4	68.70	58.70	68.44	58.96	70.11	57.29	68.90	58.50	68.95	58.45	69.21	58.19	68.34	59.06

Table 12

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	5/21/2019		11/19/2019		5/12/2020		11/22/2020		5/9/2021		11/14/2021 (b)		6/26/2022	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	13.98	115.82	16.47	113.33	15.67	114.13	15.58	114.22	14.75	115.05	15.35	114.45	14.85	114.95
MW-03	Shallow	113.6	7.08	106.52	7.02	106.58	6.09	107.51	6.1	107.50	6.4	107.20	5.86	107.74	6.21	107.39
MW-04	Shallow	124.4	8.80	115.60	11.07	113.33	11.00	113.40	10.85	113.55	9.75	114.65	10.43	113.97	-	114.50
MW-04R	Shallow	127.5	-	-	-	-	-	-	-	-	-	-	-	-	9.90	113.11
MW-05R	Shallow	123.5	15.74	107.76	16.61	106.89	16.55	106.95	15.84	107.66	NM	-	13.52	109.98	14.36	-
MW-09	Shallow	125.1	9.61	115.49	12.00	113.10	11.57	113.53	11.23	113.87	10.35	114.75	10.85	114.25	10.50	114.60
MW-16	Shallow	124.0	9.37	114.63	12.43	111.57	11.66	112.34	11.68	112.32	11.15	112.85	11.05	112.95	11.22	112.78
MW-18	Shallow	125.1	22.97	102.13	21.12	103.98	23.10	102.00	23.80	101.30	26.71	98.39	21.42	103.68	22.05	103.05
MW-20	Shallow	125.4	10.64	114.76	12.98	112.42	12.57	112.83	12.11	113.29	11.22	114.18	11.34	114.06	14.41	110.99
MW-38R	Shallow	125.4	19.13	106.27	19.83	105.57	19.03	106.37	19.25	106.15	18.55	106.85	15.63	109.77	17.66	107.74
MW-39	Shallow	124.6	23.00	101.60	23.94	100.66	23.04	101.56	23.52	101.08	22.98	101.62	21.29	103.31	22.22	102.38
MW-42	Shallow	125.9	18.91	106.99	19.44	106.46	18.85	107.05	NM	-	17.98	107.92	15.64	110.26	NM	-
MW-43	Shallow	122.8	21.46	101.34	22.04	100.76	20.98	101.82	21.91	100.89	21.02	101.78	20.10	102.70	20.47	102.33
MW-44	Shallow	127.1	15.91	111.19	17.24	109.86	16.30	110.80	16.52	110.58	16.26	110.84	15.21	111.89	15.80	111.30
MW-45	Shallow	126.7	11.75	114.97	14.55	112.17	NM	-	13.61	113.11	12.69	114.03	13.35	113.37	12.69	114.03
RW-1S	Shallow	122.9	26.42	96.48	28.64	94.26	29.16	93.74	28.13	94.77	25.00	97.90	13.28	109.62	NM	-
RW-2S	Shallow	123.5	31.16	92.34	31.70	91.80	33.33	90.17	35.31	88.19	34.85	88.65	16.02	107.48	NM	-
RW-3S	Shallow	125.4	22.10	103.30	23.24	102.16	22.85	102.55	26.72	98.68	25.36	100.04	15.69	109.71	NM	-
MW-01D	Deep	129.4	56.55	72.85	59.49	69.91	57.17	72.23	59.91	69.49	57.46	71.94	45.20	84.20	47.46	81.94
MW-16D	Deep	124.1	38.30	85.80	40.99	83.11	38.67	85.43	39.97	84.13	38.81	85.29	37.06	87.04	NM	-
MW-21D	Deep	126.3	48.38	77.92	50.75	75.55	48.50	77.80	50.37	75.93	48.64	77.66	41.50	84.80	43.11	83.19
MW-22D	Deep	128.9	44.02	84.83	46.20	82.65	44.05	84.80	46.55	82.30	44.72	84.13	43.36	85.49	44.90	83.95
MW-23D	Deep	125.2	36.88	88.32	39.40	85.80	37.16	88.04	39.22	85.98	37.36	87.84	36.73	88.47	38.36	86.84
MW-24D	Deep	129.1	49.67	79.43	51.12	77.98	48.80	80.30	53.02	76.08	50.01	79.09	49.40	79.70	51.06	78.04
MW-27D	Deep	117.2	28.15	89.05	30.68	86.52	28.64	88.56	30.62	86.58	28.89	88.31	28.72	88.48	29.82	87.38
MW-40D	Deep	124.1	38.50	85.60	41.16	82.94	38.59	85.51	40.97	83.13	39.00	85.10	37.48	86.62	40.04	84.06
MW-41D	Deep	127.1	45.42	81.68	48.50	78.60	45.28	81.82	48.65	78.45	45.95	81.15	44.51	82.59	46.96	80.14
MW-46D	Deep	124.8	35.47	89.30	37.90	86.87	35.73	89.04	37.72	87.05	35.95	88.82	35.62	89.15	37.13	87.64
RW-1D	Deep	126.9	62.44	64.46	64.86	62.04	NM	-	NM	-	NM	-	41.71	85.19	NM	-
RW-2D	Deep	127.4	68.19	59.21	71.36	56.04	69.35	58.05	69.72	57.68	69.41	57.99	43.90	83.50	NM	-

Table 12

Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Zone	TOC elevation	11/7/2022		11/20/2022	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-01	Shallow	129.8	15.66	114.14	15.65	114.15
MW-03	Shallow	113.6	6.39	107.21	6.29	107.31
MW-04	Shallow	124.4	-	- (b)	-	110.39
MW-04R	Shallow	127.5	13.93	113.54	14.01	111.52
MW-05R	Shallow	123.5	NM	-	15.95	107.55
MW-09	Shallow	125.1	10.81	114.29	11.08	114.02
MW-16	Shallow	124.0	11.84	112.16	11.75	112.25
MW-18	Shallow	125.1	23.37	101.73	23.39	101.71
MW-20	Shallow	125.4	11.35	114.05	11.73	113.67
MW-38R	Shallow	125.4	19.32	106.08	19.01	106.39
MW-39	Shallow	124.6	23.74	100.86	23.49	101.11
MW-42	Shallow	125.9	18.68	107.22	18.48	107.42
MW-43	Shallow	122.8	21.58	101.22	21.51	101.29
MW-44	Shallow	127.1	16.12	110.98	15.85	111.25
MW-45	Shallow	126.7	NM	-	13.54	113.18
RW-1S	Shallow	122.9	20.77	102.13	20.41	102.49
RW-2S	Shallow	123.5	29.30	94.20	28.82	94.68
RW-3S	Shallow	125.4	NM	-	16.94	108.46
MW-01D	Deep	129.4	NM	-	60.02	69.38
MW-16D	Deep	124.1	NM	-	NM	-
MW-21D	Deep	126.3	NM	-	51.95	74.35
MW-22D	Deep	128.9	NM	-	46.90	81.95
MW-23D	Deep	125.2	NM	-	39.85	85.35
MW-24D	Deep	129.1	NM	-	53.11	75.99
MW-27D	Deep	117.2	NM	-	31.18	86.02
MW-40D	Deep	124.1	NM	-	41.58	82.52
MW-41D	Deep	127.1	NM	-	48.78	78.32
MW-46D	Deep	124.8	NM	-	38.38	86.39
RW-1D	Deep	126.9	NM	-	64.80	62.10
RW-2D	Deep	127.4	NM	-	71.59	55.81

a/ Vertical datum is NAVD-88.
NM = not measured; TOC = top of casing; NA = not available because the well had not been installed.
Light gray shading denotes wells screened in the shallow (unconfined) zone; blue shading denotes wells screened in the deep (confined) zone.
Continuous pumping of the groundwater recovery well system started on March 29, 2017.
Water levels from both shallow and deep recovery wells were measured in piezometers co-located with the wells.

b/ Water level measurements representative of non-pumping conditions in the aquifer system.

Table 13

2022 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

			Shallow Wells											
Well ID:			**MW-01**		**MW-03**		**MW-04**	**MW-4R (d)**	**MW-05R**		**MW-09**		**MW-16**	
Date Sampled:			**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**													
Acetone	1,400		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	86.1	50.1
Chloroethane	2,100		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	42.6	136
Chloroform	80		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.8		1.0 U	1.0 U	1.0 U	1.0 U	**173**	**37.4**	1.0 U	1.0 U	**3.0**	1.9	**1,030**	**3,290**
1,2-Dichloroethane	5		1.0 U	1.0 U	1.0 U	1.0 U	3.1	1.1	1.0 U	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	1.0 U	1.0 U	**339**	**76.0**	1.0 U	1.0 U	**57.7**	**35.7**	**1,210**	**4,290**
cis-1,2-Dichloroethene	70		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	15	(c)	0.23	1.0 U	0.50 U	1.0 U	**86.8**	**57.3**	0.96	1.1	4.5	7.5	**26.4**	**143**
Ethylbenzene	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	2.2
Methyl t-Butyl Ether	20		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U
Tetrachloroethene	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**5.5**	**9.4**
Toluene	1,000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4
1,1,1-Trichloroethane	200		1.0 U	1.0 U	1.0 U	1.0 U	1.8	1.1	1.2	1.0	1.0 U	1.0 U	**1,610**	**2,960**
1,1,2-Trichloroethane	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5		1.0 U	1.0 U	1.0 U	1.0 U	3.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**13.8**	**28.0**
Vinyl Chloride	3		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.3	**13.2**
mp-Xylene	(see total)		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.7	6.5
o-Xylene	(see total)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	3.2
Total Xylenes	10,000		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	6.8	9.7

Table 13

2022 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

			Shallow Wells													
	Well ID:		**MW-18**		**MW-20**		**MW-38R**		**MW-39**		**MW-42**		**MW-43**		**MW-44**	
	Date Sampled:		**Jun 2022**	**Nov 2022**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**7/15/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**															
Acetone	1,400		NS	NS	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Chloroethane	2,100		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.8		NS	NS	**294**	**258**	**7.6**	**7.1**	1.0 U	1.0 U	1.0 U	1.0 U	2.5	1.7	2.3	2.4
1,2-Dichloroethane	5		NS	NS	**10.8**	**9.7**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7		NS	NS	**426**	**348**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**29.4**	**20.3**	3.2	3.9
cis-1,2-Dichloroethene	70		NS	NS	2.9	2.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	15	(c)	NS	NS	**377**	**560**	14.4	**20.1**	0.22	1.0 U	5.6	5.4	7.0	9.6	2.5	4.2
Ethylbenzene	700		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl t-Butyl Ether	20		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.9	2.2	1.0 U	1.0 U
Methylene Chloride	5		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.9	8.0
1,1,2-Trichloroethane	5		NS	NS	2.7	2.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5		NS	NS	2.7	2.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	3		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
mp-Xylene	(see total)		NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	(see total)		NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	10,000		NS	NS	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Table 13

2022 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

			Deep Wells										
	Well ID:		**MW-01D**		**MW-16D**			**MW-21D**		**MW-22D**		**MW-23D**	
	Date Sampled:		**6/26/22**	**11/20/22**	**7/15/22**	**DUP-071522 (e)**	**12/29/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**												
Acetone	1,400		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Chloroethane	2,100		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.8		**3.1**	**3.0**	**27.4**	**26.8**	**16.4**	1.0 U	1.0 U	1.0 U	1.0 U	**34.6**	**33.6**
1,2-Dichloroethane	5		1.0 U	1.0 U	1.7	1.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.7
1,1-Dichloroethene	7		**19.1**	**16.8**	**136**	**112**	**80.1**	**24.5**	**17.6**	**9.0**	6.1	**138**	**140**
cis-1,2-Dichloroethene	70		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	15	(c)	4.0	6.8	**39.2**	**33.7**	**29.9**	4.2	5.5	1.6	2.7	**27.0**	**59.6**
Ethylbenzene	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl t-Butyl Ether	20		1.0 U	1.0 U	1.0 U	1.0	1.2	1.1	1.2	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200		1.3	1.0	8.3	7.9	4.7	1.0 U	1.0 U	1.0 U	1.0 U	10.7	9.7
1,1,2-Trichloroethane	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	3		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
mp-Xylene	(see total)		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	(see total)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	10,000		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Table 13

2022 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

			Deep Wells							
	Well ID:		**MW-27D**		**MW-40D**		**MW-41D**		**MW-46D**	
	Date Sampled:		**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**	**6/26/22**	**11/20/22**
Parameters	**Groundwater Cleanup Standards (µg/L) (b)**									
Acetone	1,400		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Chloroethane	2,100		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.8		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**20.7**	**15.7**
1,2-Dichloroethane	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	1.0 U
1,1-Dichloroethene	7		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**92.4**	**74.9**
cis-1,2-Dichloroethene	70		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	15	(c)	0.13	1.0 U	0.18	1.0 U	0.62	1.1	**23.4**	**40.1**
Ethylbenzene	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl t-Butyl Ether	20		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.7	3.6
1,1,2-Trichloroethane	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	3		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
mp-Xylene	(see total)		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	(see total)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	10,000		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Notes:

a/ U = not detected above the method detection limit; VOC = volatile organic compound; NS = not sampled.
Only detected VOC concentrations are provided.
All concentrations are in micrograms per liter (µg/L).
Results shown in **bold** exceed the cleanup standard.
June and July 2022 samples are representative of non-pumping conditions.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/land/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil20and20Groundwater20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

c/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

d/ MW-04 was replaced in September 2022 with monitoring well MW-4R.

e/ Duplicate sample shown to the right of primary analytical sample.

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-01	5/14/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.23	2.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-03	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.6	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/1/2017	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	1.0 U
	5/30/2018	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	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-04	12/7/2016	10.0 U	**259**	10.0 U	**1,020**	10.0 U	**576**	20.0 U	4.0 U	31.7	10.0 U	10.0 U	10.0 U
	5/2/2017	4.0 U	**103**	4.0 U	**459**	4.0 U	**252**	8.0 U	4.0 U	13.0	4.0 U	4.0 U	4.0 U
	11/15/2017	5.0 U	**29.2**	1.0 J	**151**	1.0 U	**121**	**10.5**	0.687 J	4.3	1.0 U	1.4	1.0 U
	5/30/2018	1.0 U	**33.3**	1.0 U	**153**	1.0 U	**92.7**	2.0 U	1.0 U	4.0	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**23.3**	1.0 U	**89.9**	1.0 U	1.0 U	2.0 U	1.0 U	1.6	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	**57.7**	1.1	**142**	1.0 U	**111**	5.0 U	1.0 U	1.7	1.0 U	1.1	1.0 U
	11/19/2019	1.0 U	**45.1**	1.1	**126**	1.0 U	**94.2**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/13/2020	1.0 U	**58.6**	1.3	**149**	1.0 U	**84.6**	5.0 U	1.0 U	1.4	1.2	1.2	1.0 U
	11/22/2020	1.0 U	**62.0**	1.6	**141**	1.0 U	**151**	5.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U
	5/9/2021	2.5 U	**130**	2.9	**361**	2.5 U	**303**	12.5 U	2.5 U	3.4	2.5 U	2.5 U	2.5 U
	11/14/2021	1.0 U	**82.7**	1.2	**175**	1.0 U	**134**	5.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U
	6/26/2022	1.0 U	**173**	3.1	**339**	1.0 U	**86.8**	5.0 U	1.0 U	1.8	1.0 U	3.0	1.0 U
MW-04R	11/20/2022	1.0 U	**37.4**	1.1	**76.0**	1.0 U	**57.3**	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-05R	12/7/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**16.5**	2.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U
	5/1/2017	1.0 U	1.4	1.0 U	1.4	1.0 U	**16.5**	2.0 U	1.0 U	2.7	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	1.6	1.0 U	2.5	1.0 U	11.0	**10.2**	1.0 U	1.7	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.8	1.0 U	2.7	1.0 U	11.5	2.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	1.0 U	1.0 U	1.3	1.0 U	2.0 U	2.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	7.6	5.0 U	1.0 U	1.9	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.8	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	1.8	1.0 U	1.7	1.0 U	13.4	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.2	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.6	1.0 U	1.4	1.0 U	12.0	5.0 U	1.0 U	2.4	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	5.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-09	12/8/2016	1.0 U	**4.5**	1.0 U	**104**	1.0 U	**95.5**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	**2.9**	1.0 U	**63.8**	1.0 U	**20.8**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	**3.1**	0.4 J	**60.2**	1.0 U	**32.4**	5.0 U	1.0 U	0.7 J	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	2.2	1.0 U	**49.2**	1.0 U	**23.4**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**4.5**	1.0 U	**75.9**	1.0 U	**37.4**	2.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	**3.6**	1.0 U	**70.8**	1.0 U	**32.8**	5.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	2.6	1.0 U	**48.7**	1.0 U	**24.4**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/13/2020	1.0 U	2.6	1.0 U	**50.5**	1.0 U	**18.7**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	2.5	1.0 U	**56.4**	1.0 U	**25.7**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	**3.0**	1.0 U	**56.3**	1.0 U	**23.6**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	2.5	1.0 U	**53.3**	1.0 U	**22.6**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	**3.0**	1.0 U	**57.7**	1.0 U	4.5	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.9	1.0 U	**35.7**	1.0 U	7.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-16	12/8/2016	200 U	**6,420**	200 U	**26,200**	200 U	**1,450**	400 U	100 U	**4,390**	200 U	200 U	200 U
	5/2/2017	225	**7,910**	100 U	**10,500**	100 U	**971**	200 U	100 U	**8,930**	100 U	100 U	100 U
	11/15/2017	732	**7,110**	**22**	**7,740**	46	**836**	**11**	**18.4**	**5,590**	1.0 U	**69**	**19**
	5/30/2018	249	**6,250**	50 U	**4,690**	50 U	**636**	100 U	50 U	**7,360**	50 U	50 U	50 U
	11/7/2018	275	**7,360**	50 U	**7,800**	50 U	**866**	100 U	50 U	**6,420**	50 U	**74.2**	50 U
	5/22/2019	10 U	**343**	10 U	**1,160**	10 U	**1,230**	50 U	10 U	**216**	10 U	**13.7**	10 U
	11/19/2019	23.4	**608**	10 U	**1,440**	10 U	**81.9**	50 U	10 U	**314**	10 U	**18.3**	10 U
	5/13/2020	10.9	**394**	5 U	**571**	5 U	**39.2**	5 U	5 U	**487**	5 U	**10.7**	5 U
	11/22/2020	20.0 U	**1,560**	20 U	**1,130**	20 U	**84.2**	100 U	20 U	**2,060**	5 U	20.0 U	20 U
	5/9/2021	4.2	**169**	2 U	**276**	2.1	**19.3**	10 U	2.2	123	2 U	**6.2**	2 U
	11/14/2021	12.5 U	**1,350**	12.5 U	**1,630**	12.5 U	**76.0**	62.5 U	12.5 U	**1,720**	12.5 U	12.5 U	12.5 U
	6/26/2022	42.6	**1,030**	1.0 U	**1,210**	1.0 U	**26.4**	1.4	**5.5**	**1,610**	1.0 U	**13.8**	**2.3**
	11/20/2022	136.0	**3,290**	1.0 U	**4,290**	1.0 U	**143.0**	2.2	**9.4**	**2,960**	1.0 U	**28.0**	**13.2**
MW-18	12/7/2016	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	1.0 U
	5/1/2017	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	1.0 U
	11/15/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**24.9**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	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	1.0 U
	11/7/2018	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	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-20	12/9/2016	2.0 U	**99.7**	**5.1**	**173**	2.0 U	**767**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	5/2/2017	2.0 U	**161**	**7.3**	**286**	2.0 U	**967**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	11/15/2017	5.0 U	**136**	**5.7**	**223**	1.4	**969**	5.0 U	1.0 U	1.0 U	1.9	1.0 U	1.0 U
	5/30/2018	2.0 U	**115**	**5.5**	**205**	2.0 U	**966**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	11/7/2018	2.5 U	**145**	**6.3**	**233**	2.5 U	**986**	5.0 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	5/21/2019	2.0 U	**157**	**6.5**	**226**	2.0 U	**1,620**	10.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	11/19/2019	2.0 U	**175**	**7.5**	**244**	2.0 U	**1,220**	10.0 U	2.0 U	2.0 U	2.1	2.0 U	2.0 U
	5/13/2020	2.0 U	**188**	**7.7**	**232**	2.0 U	**1,000**	10.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	11/22/2020	2.0 U	**205**	**7.5**	**272**	2.0 U	**1,260**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	5/9/2021	2.0 U	**214**	**7.5**	**267**	2.2	**1,010**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	11/14/2021	2.0 U	**256**	**8.7**	**321**	2.0 U	**1,210**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	6/26/2022	1.0 U	**294**	**10.8**	**426**	2.9	**377**	5.0 U	1.0 U	1.0 U	2.7	2.7	1.0 U
	11/20/2022	1.0 U	**258**	**9.7**	**348**	2.6	**560**	1.0 U	1.0 U	1.0 U	2.4	2.7	1.0 U
MW-38R	12/9/2016	1.0 U	**3.8**	1.0 U	1.0 U	1.0 U	**18.3**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/1/2017	1.0 U	**6.0**	1.0 U	1.0 U	1.0 U	**42.6**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	**8.3**	1.0 U	1.0 U	1.0 U	**62.5**	**8.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	**4.3**	1.0 U	1.0 U	1.0 U	**40.7**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**6.9**	1.0 U	1.0 U	1.0 U	**39.4**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	**4.7**	1.0 U	1.0 U	1.0 U	**43.2**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	**7.7**	1.0 U	1.0 U	1.0 U	**51.5**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	**6.2**	1.0 U	1.0 U	1.0 U	**40.8**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	**6.5**	1.0 U	1.0 U	1.0 U	**40.9**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	**5.5**	1.0 U	1.0 U	1.0 U	**47.0**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2021	1.0 U	**6.7**	1.0 U	1.0 U	1.0 U	**46.2**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	**7.6**	1.0 U	1.0 U	1.0 U	14.4	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	**7.1**	1.0 U	1.0 U	1.0 U	**20.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-39	12/7/2016	1.0 U	1.0 U	1.0 U	1.7	1.0 U	2.5	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/1/2017	1.0 U	1.0 U	1.0 U	1.1	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	1.0 U	1.0 U	0.6 J	1.0 U	2.2	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	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	1.0 U
	11/7/2018	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	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-42	12/7/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.8	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/1/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	8.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**19.3**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	7.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.3	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.6	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.6	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	11.2	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	13.2	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	13.3	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	12.5	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/15/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-43	12/7/2016	2.0 U	**15.9**	2.1	**171**	2.0 U	**237**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	5/1/2017	2.0 U	**21.3**	2.1	**177**	2.0 U	**206**	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	11/15/2017	5.0 U	**15.9**	1.3	**159**	1.0 U	**165**	5.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U
	5/30/2018	2.0 U	**5.9**	1.0 U	**68**	1.0 U	**57.6**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**13.8**	1.2	**118**	1.0 U	**107**	2.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U
	5/21/2019	1.0 U	**5.2**	1.0 U	**53.9**	1.0 U	**52.0**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	**4.3**	1.0 U	**48.5**	1.0 U	**55.2**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/12/2020	1.0 U	**3.8**	1.0 U	**46.3**	1.0 U	**49.0**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	**2.9**	1.0 U	**31.8**	1.0 U	**42.7**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	2.7	1.0 U	**31.7**	1.0 U	**34.1**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	2.6	1.0 U	**31.3**	1.0 U	**34.3**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	2.5	1.0 U	**29.4**	1.0 U	7.0	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.7	1.0 U	**20.3**	1.0 U	9.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-44	12/7/2016	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	1.0 U
	5/1/2017	1.0 U	**6.6**	1.0 U	5.9	1.0 U	**49.1**	2.0 U	1.0 U	27.7	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.4	1.0 U	1.4	1.0 U	8.4	2.0 U	1.0 U	4.9	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	**14.9**	1.0 U	**22.4**	1.0 U	**64.4**	5.0 U	1.0 U	74.3	1.0 U	1.0 U	1.0 U
	5/13/2020	1.0 U	**3.0**	1.0 U	4.1	1.0 U	**17.7**	5.0 U	1.0 U	11.9	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.7	1.0 U	2.9	1.0 U	10.2	5.0 U	1.0 U	6.9	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	**3.8**	1.0 U	**7.2**	1.0 U	13.3	5.0 U	1.0 U	15.4	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	2.3	1.0 U	3.2	1.0 U	2.5	5.0 U	1.0 U	5.9	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	2.4	1.0 U	3.9	1.0 U	4.2	1.0 U	1.0 U	8.0	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	1.0 U
	6/28/2018	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	1.0 U
	5/22/2019	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2020	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/15/2021	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/27/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/21/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-1D	1/2/2017	2.0 U	**72**	4.7	**375**	2.0 U	**236**	4.0 U	2.5 U	37.5	2.0 U	2.0 U	2.0 U
	5/3/2017	2.5 U	**105**	**5.7**	**407**	2.5 U	**329**	5.0 U	2.5 U	37.1	2.5 U	2.5 U	2.5 U
	11/15/2017	5.0 U	**80**	3.8	**277**	0.6 J	**243**	5.0 U	0.519 J	29.8	0.8 J	1.7	1 U
	5/30/2018	1.0 U	**14.9**	1.0 U	**71.4**	1.0 U	**64.4**	2.0 U	1.0 U	5.3	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**7.1**	1.0 U	**38.8**	1.0 U	2.0 U	2.0 U	1.0 U	3.3	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	2.1	1.0 U	**13.7**	1.0 U	12.8	5.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	**3.4**	1.0 U	**17.7**	1.0 U	**17.9**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/18/2020	1.0 U	2.6	1.0 U	**16.5**	1.0 U	12.8	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	**3.1**	1.0 U	**17.6**	1.0 U	**16.9**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.8	1.0 U	**12.2**	1.0 U	9.0	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	**3.8**	1.0 U	**22.4**	1.0 U	**16.5**	5.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	**3.1**	1.0 U	**19.1**	1.0 U	4.0	5.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	**3.0**	1.0 U	**16.8**	1.0 U	6.8	1.0 U	1.0 U	1.0	1.0 U	1.0 U	1.0 U
MW-16D	12/8/2016	2.0 U	**56.6**	2.9	**254**	2.0 U	**202**	4.0 U	2.0 U	21	2.0 U	2.0 U	2.0 U
	5/2/2017	2.0 U	**43.7**	2.9	**235**	2.0 U	**182**	4.0 U	2.0 U	16.4	2.0 U	2.0 U	2.0 U
	11/15/2017	5.0 U	**29.7**	1.9	**179**	0.3 J	**192**	**10.0**	1.0 U	15.1	0.5 J	0.9 J	1.0 U
	5/30/2018	1.0 U	**26.4**	1.6	**180**	1.0 U	**153**	2.0 U	1.0 U	10.3	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**27.5**	1.8	**161**	1.0 U	**158**	2.0 U	1.0 U	12.5	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	**28.5**	2.1	**172**	1.0 U	**148**	5.0 U	1.0 U	14.5	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	**25.6**	1.7	**133**	1.0 U	**140**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/13/2020	1.0 U	**29.1**	1.9	**145**	1.0 U	**130**	5.0 U	1.0 U	11.7	1.0 U	1.0 U	1.0 U
	12/8/2020	1.0 U	**25.9**	1.6	**127**	1.0 U	**105**	5.0 U	1.0 U	10.1	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	**27.7**	1.7	**130**	1.0 U	**107**	5.0 U	1.0 U	9.5	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	**21.5**	1.1	**98.7**	1.0 U	**84.5**	5.0 U	1.0 U	6.9	1.0 U	1.0 U	1.0 U
	7/15/2022	1.0 U	**27.4**	1.7	**136.0**	1.0 U	**39.2**	1.0 U	1.0 U	8.3	1.0 U	1.0 U	1.0 U
	12/29/2022	1.0 U	**16.4**	1.0 U	**80.1**	1.0 U	**29.9**	5.0 U	1.0 U	4.7	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-21D	12/16/2016	1.0 U	2.6	1.0 U	**23.4**	1.0 U	**18.6**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/1/2017	1.0 U	**6.9**	1.4	**111**	1.0 U	**57.5**	2.0 U	1.0 U	2.3	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	2.0	1.0 U	**14.4**	1.0 U	**18.5**	5.0 U	1.0 U	0.7 J	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.0	1.0 U	**38.8**	1.0 U	**32.2**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	1.0 U	1.0 U	**30.0**	1.0 U	**18.0**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	**9.9**	1.0 U	8.4	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	4.1	1.0 U	4.1	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/18/2020	1.0 U	1.0 U	1.0 U	**13.6**	1.0 U	7.6	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	1.0 U	1.0 U	**7.8**	1.0 U	5.1	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	4.1	1.0 U	2.8	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	**18.7**	1.0 U	12.9	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	**24.5**	1.0 U	4.2	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	**17.6**	1.0 U	5.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-22D	12/7/2016	1.0 U	2.5	1.0 U	**31.5**	1.0 U	**24.5**	2.0 U	1.0 U	4.1	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	2.5	1.0 U	**36.9**	1.0 U	**24.6**	2.0 U	1.0 U	3.7	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	1.72	1.0 U	**24.4**	1.0 U	**19.6**	5.0 U	1.0 U	2.8	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.0 U	1.0 U	**13.1**	1.0 U	7.9	2.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	1.0 U	1.0 U	**9.7**	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	6.3	1.0 U	5.1	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	5.6	1.0 U	4.9	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/18/2020	1.0 U	1.0 U	1.0 U	6.2	1.0 U	4.6	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	1.0 U	1.0 U	**7.1**	1.0 U	4.9	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	5.9	1.0 U	4.0	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	6.2	1.0 U	5.2	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	**9.0**	1.0 U	1.6	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	6.1	1.0 U	2.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-23D	1/2/2017	2.0 U	**26.4**	2.0 U	**140**	2.0 U	**151**	**8.3**	1.0 U	17.0	2.0 U	2.0 U	2.0 U
	5/1/2017	2.0 U	**39.1**	2.4	**208**	2.0 U	**177**	4.0 U	2.0 U	19.9	2.0 U	2.0 U	2.0 U
	11/15/2017	5.0 U	**31.1**	1.9	**179**	0.3 J	**158**	5.0 U	0.417 J	19.3	0.4 J	0.9 J	1.0 U
	5/30/2018	1.0 U	**30.5**	1.6	**172**	1.0 U	**148**	2.0 U	1.0 U	14.8	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	**36.2**	1.9	**185**	1.0 U	**146**	2.0 U	1.0 U	17.0	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	**18.5**	1.2	**96.4**	1.0 U	**70.7**	5.0 U	1.0 U	8.6	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	**22.7**	1.4	**107**	1.0 U	**109**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/13/2020	1.0 U	**35.2**	1.8	**142**	1.0 U	**112**	5.0 U	1.0 U	13.6	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	**26.3**	1.2	**106**	1.0 U	**96.7**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	**31.8**	1.5	**126**	1.0 U	**99.0**	5.0 U	1.0 U	11.7	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	**28.5**	1.1	**110**	1.0 U	**92.4**	5.0 U	1.0 U	9.2	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	**34.6**	1.5	**138**	1.0 U	**27.0**	5.0 U	1.0 U	10.7	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	**33.6**	1.7	**140**	1.0 U	**59.6**	1.0 U	1.0 U	9.7	1.0 U	1.0 U	1.0 U
MW-27D	12/7/2016	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	1.0 U
	5/1/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.6	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	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	1.0 U
	5/21/2019	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	1.0 U
	5/13/2020	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	1.0 U
	5/9/2021	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	1.0 U
	11/14/2021	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	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 14

Historical Monitoring Well Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
(December 2016 - November 2022) (a)

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Cleanup Standards (b)		2,100	2.8	5	7	70	15 (c)	5	5	200	5	5	2
MW-40D	12/9/2016	1.0 U	**2.9**	1.0 U	**18.1**	1.0 U	9.4	2.0 U		1.0 U	1.0 U	1.0 U	1.0 U
	5/1/2017	1.0 U	**3.1**	1.0 U	**17.4**	1.0 U	8.5	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/15/2017	5.0 U	0.9 J	1.0 U	5.2	1.0 U	5.2	**9.7**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.0 U	1.0 U	2.9	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	1.0 U	1.0 U	4.4	1.0 U	2.7	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/18/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/22/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.18	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-41D	12/16/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.8	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/17/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	1.0 U	1.0 U	1.0 U	1.1	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/18/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/9/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/26/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.62	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/20/2022	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

a/ U = not detected above the method detection limit.
All concentrations are in micrograms per liter (µg/L).
Results shown in **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: https://mde.maryland.gov/programs/land/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf

c/ Numeric cleanup standards from WSP's October 2, 2015, Response Action Plan, Revision 2.

APPENDIX

A LAB REPORTS FOR SYSTEM SAMPLING

PHASE SEPARATION SCIENCE

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011911

February 2, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22011911**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22011911**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 23, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22011911

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/19/2022 at 01:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22011911-001	Effluent VSP-4	WASTE WATER	01/19/22 11:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011911

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/19/2022 11:15** **PSS Sample ID: 22011911-001**
Matrix: WASTE WATER **Date/Time Received: 01/19/2022 13:20**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**4.8**	ug/L	1.0		1	01/20/22	01/20/22 21:23	1064
Lead	ND	ug/L	1.0		1	01/20/22	01/20/22 21:23	1064
Nickel	**16.2**	ug/L	1.00		1	01/20/22	01/20/22 21:23	1064
Zinc	**30.1**	ug/L	20.0		1	01/20/22	01/20/22 21:23	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.6**	ug/L	1.0		1	01/24/22	01/25/22 17:21	1064
Lead	ND	ug/L	1.0		1	01/24/22	01/24/22 16:31	1064
Nickel	**16.3**	ug/L	1.00		1	01/24/22	01/25/22 17:21	1064
Zinc	**24.7**	ug/L	20.0		1	01/24/22	01/24/22 16:31	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=5

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	01/21/22	01/21/22 12:32	1011
Acrylonitrile	ND	ug/L	5.0		1	01/21/22	01/21/22 12:32	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Chloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Vinyl Chloride	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Bromomethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Chloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Methylene Chloride	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Chloroform	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Benzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011911

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/19/2022 11:15** **PSS Sample ID: 22011911-001**
Matrix: WASTE WATER **Date/Time Received: 01/19/2022 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=5

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Toluene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Tetrachloroethylene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Chlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Ethylbenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
Bromoform	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:32	1011

Surrogate(s)	***Recovery***		***Limits***				
Dibromofluoromethane	*105*	*%*	*87-120*		*1*	*01/21/22*	*01/21/22 12:32*	*1011*
4-Bromofluorobenzene	*97*	*%*	*85-147*		*1*	*01/21/22*	*01/21/22 12:32*	*1011*
Toluene-D8	*101*	*%*	*88-110*		*1*	*01/21/22*	*01/21/22 12:32*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**28**	mg/L	13		20	01/25/22	01/25/22 16:34	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011911

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/19/2022 11:15** **PSS Sample ID: 22011911-001**
Matrix: WASTE WATER **Date/Time Received: 01/19/2022 13:20**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	2.0		1	01/25/22	01/25/22 09:08	1034

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 20-Jan-22 15:40

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		01/20/22	01/25/22 13:50	4005

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Project Name: Kop-Flex

PSS Project No.: 22011911

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22011911: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22011911

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22011911-001	W	89227	190889	01/20/2022 09:56	01/20/2022 21:23
	89227-1-BKS	BKS	89227-1-BKS	W	89227	190889	01/20/2022 09:56	01/20/2022 20:46
	89227-1-BLK	BLK	89227-1-BLK	W	89227	190889	01/20/2022 09:56	01/20/2022 20:42
	20220118g S	MS	22011812-002 S	W	89227	190889	01/20/2022 09:56	01/20/2022 20:56
	RW-11-01192022 S	MS	22011920-011 S	W	89227	190889	01/20/2022 09:56	01/20/2022 22:38
	20220118g SD	MSD	22011812-002 S	W	89227	190889	01/20/2022 09:56	01/20/2022 21:00
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22011911-001	W	89270	190963	01/24/2022 13:50	01/24/2022 16:31
	89270-1-BKS	BKS	89270-1-BKS	W	89270	190963	01/24/2022 13:50	01/24/2022 16:26
	89270-1-BLK	BLK	89270-1-BLK	W	89270	190963	01/24/2022 13:50	01/24/2022 16:21
	Effluent VSP-4 S	MS	22011911-001 S	W	89270	190963	01/24/2022 13:50	01/24/2022 16:36
	Effluent VSP-4 SD	MSD	22011911-001 S	W	89270	190963	01/24/2022 13:50	01/24/2022 16:40
	89270-1-BKS	Reanalysis	89270-1-BKS	W	89270	190996	01/24/2022 13:50	01/25/2022 17:16
	89270-1-BLK	Reanalysis	89270-1-BLK	W	89270	190996	01/24/2022 13:50	01/25/2022 16:58
	Effluent VSP-4	Reanalysis	22011911-001	W	89270	190996	01/24/2022 13:50	01/25/2022 17:21
EPA 624 .1	Effluent VSP-4	Initial	22011911-001	W	89256	190925	01/21/2022 08:18	01/21/2022 12:32
	89256-1-BKS	BKS	89256-1-BKS	W	89256	190925	01/21/2022 08:18	01/21/2022 08:41
	89256-1-BLK	BLK	89256-1-BLK	W	89256	190925	01/21/2022 08:18	01/21/2022 10:39
	Effluent VSP-4 S	MS	22011911-001 S	W	89256	190925	01/21/2022 08:18	01/21/2022 14:26
	Effluent VSP-4 SD	MSD	22011911-001 S	W	89256	190925	01/21/2022 08:18	01/21/2022 14:49
SM 2340B	Effluent VSP-4	Initial	22011911-001	W	89227	190990	01/26/2022 10:11	01/25/2022 16:34
SM 2540D -2015	Effluent VSP-4	Initial	22011911-001	W	190953	190953	01/25/2022 09:08	01/25/2022 09:08
	190953-1-BKS	BKS	190953-1-BKS	W	190953	190953	01/25/2022 09:08	01/25/2022 09:08
	190953-1-BLK	BLK	190953-1-BLK	W	190953	190953	01/25/2022 09:08	01/25/2022 09:08
	Effluent VSP-4 D	MD	22011911-001 D	W	190953	190953	01/25/2022 09:08	01/25/2022 09:08
	CSO0019 TDA January 2022 D	MD	22012413-001 D	W	190953	190953	01/25/2022 09:08	01/25/2022 09:08
SM 5210B -2011	Effluent VSP-4	Initial	22011911-001	W	191154	191154	01/20/2022 15:40	01/25/2022 13:50

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011911

Analytical Method: SM 2540D -2015
Seq Number: 190953 Matrix: Water
MB Sample Id: 190953-1-BLK LCS Sample Id: 190953-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	106.7	103.3	97	80-120	mg/L	

Analytical Method: SM 2540D -2015
Seq Number: 190953 Matrix: Waste Water
Parent Sample Id: 22011911-001 MD Sample Id: 22011911-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Flag
Suspended Solids	<2.000	<2.000	NC	10	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 190889 Matrix: Water Date Prep: 01/20/22
MB Sample Id: 89227-1-BLK LCS Sample Id: 89227-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	48.79	98	85-115	ug/L	
Lead	<1.000	50.00	48.39	97	85-115	ug/L	
Nickel	<1.000	50.00	45.12	90	85-115	ug/L	
Zinc	<20.00	100	92.11	92	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 190963 Matrix: Water Date Prep: 01/24/22
MB Sample Id: 89270-1-BLK LCS Sample Id: 89270-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	50.00	44.87	90	85-115	ug/L	
Zinc	<20.00	100	91.44	91	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 190996 Matrix: Water Date Prep: 01/24/22
MB Sample Id: 89270-1-BLK LCS Sample Id: 89270-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	49.20	98	85-115	ug/L	
Nickel	<1.000	50.00	49.85	100	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011911

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 190963 Matrix: Waste Water Date Prep: 01/24/22
Parent Sample Id: 22011911-001 MS Sample Id: 22011911-001 S MSD Sample Id: 22011911-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.601	50.00	52.80	100	53.13	101	70-130	1	25	ug/L	
Lead	<1.000	50.00	45.58	91	46.33	93	70-130	2	25	ug/L	
Nickel	5.305	50.00	50.94	91	51.46	92	70-130	1	25	ug/L	
Zinc	24.67	100	120.7	96	121.9	97	70-130	1	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011911

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 190925
Matrix: Water
Date Prep: 01/21/22
MB Sample Id: 89256-1-BLK
LCS Sample Id: 89256-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	47.53	95	60-140	ug/L	
Acrylonitrile	<5.000	50.00	37.64	75	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	35.65	71	54-148	ug/L	
Chloromethane	<1.000	50.00	33.28	67	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	43.95	88	5-195	ug/L	
Bromomethane	<1.000	50.00	29.10	58	15-185	ug/L	
Chloroethane	<1.000	50.00	35.55	71	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.53	93	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	27.46	55	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.52	91	50-150	ug/L	
Methylene Chloride	<1.000	50.00	41.93	84	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.58	93	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.09	90	70-130	ug/L	
Chloroform	<1.000	50.00	45.27	91	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.98	100	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.13	98	70-130	ug/L	
Benzene	<1.000	50.00	44.32	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.42	91	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.17	90	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.59	89	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	47.80	96	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.93	100	25-175	ug/L	
Toluene	<1.000	50.00	44.97	90	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	46.14	92	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.18	90	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.17	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.15	98	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.67	89	65-135	ug/L	
Ethylbenzene	<1.000	50.00	45.76	92	60-140	ug/L	
Bromoform	<1.000	50.00	47.88	96	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.36	87	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.04	92	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.18	90	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.05	94	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		102		87-120	%
4-Bromofluorobenzene	99		95		85-147	%
Toluene-D8	101		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011911

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 190925 Matrix: Waste Water Date Prep: 01/21/22
Parent Sample Id: 22011911-001 MS Sample Id: 22011911-001 S MSD Sample Id: 22011911-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	48.93	98	50.08	100	40-160	2	60	ug/L	
Acrylonitrile	<5.000	50.00	42.31	85	41.20	82	40-160	4	60	ug/L	
Dichlorodifluoromethane	<1.000	50.00	41.20	82	39.87	80	43-150	2	27	ug/L	
Chloromethane	<1.000	50.00	35.23	70	35.98	72	1-273	3	60	ug/L	
Vinyl Chloride	<1.000	50.00	50.21	100	49.19	98	1-251	2	66	ug/L	
Bromomethane	<1.000	50.00	34.91	70	35.45	71	1-242	1	61	ug/L	
Chloroethane	<1.000	50.00	38.64	77	38.69	77	14-230	0	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	53.13	106	50.89	102	17-181	4	84	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	26.99	54	27.64	55	1-305	2	71	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.11	104	50.79	102	1-234	2	32	ug/L	
Methylene Chloride	<1.000	50.00	46.52	93	45.73	91	1-221	2	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.67	101	51.07	102	54-156	1	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.62	101	48.94	98	59-155	3	40	ug/L	
Chloroform	<1.000	50.00	50.21	100	48.70	97	51-138	3	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	56.11	112	54.16	108	52-162	4	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	55.85	112	53.74	107	70-140	5	41	ug/L	
Benzene	<1.000	50.00	49.42	99	47.78	96	37-151	3	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.24	98	48.29	97	49-155	1	49	ug/L	
Trichloroethene	<1.000	50.00	50.70	101	49.67	99	70-157	2	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.25	99	48.40	97	1-210	2	55	ug/L	
Bromodichloromethane	<1.000	50.00	52.57	105	51.31	103	35-155	2	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	54.56	109	53.69	107	1-227	2	58	ug/L	
Toluene	<1.000	50.00	50.19	100	48.94	98	47-150	2	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.18	100	49.85	100	17-183	0	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.58	99	48.49	97	52-150	2	45	ug/L	
Tetrachloroethylene	<1.000	50.00	56.84	114	55.11	110	64-148	4	39	ug/L	
Dibromochloromethane	<1.000	50.00	55.26	111	53.49	107	53-149	4	50	ug/L	
Chlorobenzene	<1.000	50.00	50.52	101	49.10	98	37-160	3	53	ug/L	
Ethylbenzene	<1.000	50.00	51.54	103	49.94	100	37-162	3	63	ug/L	
Bromoform	<1.000	50.00	53.69	107	52.25	105	45-169	2	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.91	100	47.17	94	46-157	6	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.48	105	50.86	102	59-156	3	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.76	104	49.49	99	18-190	5	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.74	107	51.60	103	18-190	4	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	102		102		87-120	%
4-Bromofluorobenzene	94		95		85-147	%
Toluene-D8	99		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 190889 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 01/20/22 20:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	50.08	100	85-115	ug/L	
Lead	50.00	46.31	93	85-115	ug/L	
Nickel	50.00	47.29	95	85-115	ug/L	
Zinc	100	99.33	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190889 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 01/20/22 21:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.09	96	85-115	ug/L	
Lead	50.00	42.85	86	85-115	ug/L	
Nickel	50.00	48.63	97	85-115	ug/L	
Zinc	100	103.3	103	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190889 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 01/20/22 22:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.74	97	85-115	ug/L	
Lead	50.00	42.90	86	85-115	ug/L	
Nickel	50.00	48.51	97	85-115	ug/L	
Zinc	100	103.5	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190889 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 01/20/22 23:15

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.37	97	85-115	ug/L	
Lead	50.00	45.62	91	85-115	ug/L	
Nickel	50.00	46.89	94	85-115	ug/L	
Zinc	100	99.60	100	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 190889 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/20/22 16:47

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	51.27	103	90-110	ug/L	
Lead	50.00	49.41	99	90-110	ug/L	
Nickel	50.00	46.75	94	90-110	ug/L	
Zinc	100	98.35	98	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190963 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 01/24/22 15:49

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	50.00	50.08	100	85-115	ug/L	
Zinc	100	101.5	102	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190963 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 01/24/22 16:49

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	50.00	51.24	102	85-115	ug/L	
Zinc	100	102.7	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190963 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 01/24/22 17:50

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	50.00	50.01	100	85-115	ug/L	
Zinc	100	104.2	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190996 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 01/25/22 16:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	51.39	103	85-115	ug/L	
Nickel	50.00	52.16	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190996 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 01/25/22 17:07

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	53.26	107	85-115	ug/L	
Nickel	50.00	54.00	108	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190996 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 01/25/22 18:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	50.51	101	85-115	ug/L	
Nickel	50.00	51.32	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190963 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/24/22 12:24

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	50.45	101	90-110	ug/L	
Zinc	100	98.62	99	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 190996 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 01/25/22 15:01

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.10	98	90-110	ug/L	
Nickel	50.00	49.29	99	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011911

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 22011911 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1,6	3	3	6	6							
							Analysis/ Method Required	VOCs (8260B) (624)	Total metals + hardness (200.7)	Dissolved metals (200.8)	BOD	TSS								
	Effluent VSP-4	1/19/22	1115	WW	7	G		X	X	X	X	X							VOCs by 624	

⑤ ④

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	1/19/22	1320	
(2)			
(3)			
(4)			

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres TB - 1.5°C

Custody Seal: Pres / Cooler intact

Coolers: 1 Temp: 1.1 - 1.8°C

Shipping Carrier: Client

Special Instructions:
Standard 10-day TAT
metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22011911

Client Name WSP USA - Herndon
Disposal Date 02/23/2022

Received By Marissa Vertucci
Date Received 01/19/2022 01:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	1.8
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 01/19/2022

PM Review and Approval: Amber Confer Date: 01/20/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011912

February 2, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22011912**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22011912**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 23, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22011912

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/19/2022 at 01:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22011912-001	Effluent VSP-4	WASTE WATER	01/19/22 11:15
22011912-002	Inffluent VSP-1	GROUND WATER	01/19/22 11:40
22011912-003	TB-011922	WATER	01/19/22 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011912

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/19/2022 11:15** **PSS Sample ID: 22011912-001**
Matrix: WASTE WATER **Date/Time Received: 01/19/2022 13:20**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**1.8**	ug/L	1.0		1	01/31/22	01/31/22 15:37	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*101*	*%*	*80-120*		*1*	*01/31/22*	*01/31/22 15:37*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011912

Sample ID: Inffluent VSP-1 **Date/Time Sampled: 01/19/2022 11:40** **PSS Sample ID: 22011912-002**
Matrix: GROUND WATER **Date/Time Received: 01/19/2022 13:20**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**100**	ug/L	10		10	01/31/22	01/31/22 16:22	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*103*	*%*	*80-120*		*10*	*01/31/22*	*01/31/22 16:22*	*1011*

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 190897 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	01/21/22	01/21/22 18:59	1011
Benzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Bromochloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Bromoform	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Bromomethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	01/21/22	01/21/22 18:59	1011
Carbon Disulfide	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Carbon tetrachloride	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Chlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Chloroethane	**3.7**	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Chloroform	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Chloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Cyclohexane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,1-Dichloroethane	**42**	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2-Dichloroethane	**1.4**	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
cis-1,2-Dichloroethene	**1.3**	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,1-Dichloroethene	**210**	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011912

Sample ID: Inffluent VSP-1 **Date/Time Sampled: 01/19/2022 11:40** **PSS Sample ID: 22011912-002**
Matrix: GROUND WATER **Date/Time Received: 01/19/2022 13:20**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 190897 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Ethylbenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	01/21/22	01/21/22 18:59	1011
Isopropylbenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Methyl Acetate	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Methylcyclohexane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Methylene chloride	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	01/21/22	01/21/22 18:59	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Naphthalene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Styrene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Tetrachloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Toluene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,1,1-Trichloroethane	**15**	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Trichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
Vinyl chloride	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011
m&p-Xylene	ND	ug/L	2.0		1	01/21/22	01/21/22 18:59	1011
o-Xylene	ND	ug/L	1.0		1	01/21/22	01/21/22 18:59	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*94*	*%*	*88-112*		*1*	*01/21/22*	*01/21/22 18:59*	*1011*
Dibromofluoromethane	*106*	*%*	*93-111*		*1*	*01/21/22*	*01/21/22 18:59*	*1011*
Toluene-D8	*100*	*%*	*94-107*		*1*	*01/21/22*	*01/21/22 18:59*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011912

Sample ID: TB-011922 **Date/Time Sampled: 01/19/2022 00:00** **PSS Sample ID: 22011912-003**
Matrix: WATER **Date/Time Received: 01/19/2022 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	01/21/22	01/21/22 12:55	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Acrylonitrile	ND	ug/L	5.0		1	01/21/22	01/21/22 12:55	1011
Chloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Vinyl Chloride	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Bromomethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Chloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Methylene Chloride	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Chloroform	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Benzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Trichloroethene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Toluene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Tetrachloroethylene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Chlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Ethylbenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
Bromoform	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/21/22	01/21/22 12:55	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22011912

Sample ID: TB-011922 **Date/Time Sampled: 01/19/2022 00:00** **PSS Sample ID: 22011912-003**
Matrix: WATER **Date/Time Received: 01/19/2022 13:20**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*106*	*%*	*87-120*	*1*	*01/21/22*	*01/21/22 12:55*	*1011*
4-Bromofluorobenzene	*98*	*%*	*85-147*	*1*	*01/21/22*	*01/21/22 12:55*	*1011*
Toluene-D8	*102*	*%*	*88-110*	*1*	*01/21/22*	*01/21/22 12:55*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	01/31/22	01/31/22 16:00	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*100*	*%*	*80-120*	*1*	*01/31/22*	*01/31/22 16:00*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22011912

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

TCL Volatile Organic Compounds

Batch: 190897

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Laboratory control sample exceedances identified; see QC summary. Exceedances meet marginal exceedance criteria.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22011912

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-011922	Initial	22011912-003	W	89256	190925	01/21/2022 08:18	01/21/2022 12:55
	89256-1-BKS	BKS	89256-1-BKS	W	89256	190925	01/21/2022 08:18	01/21/2022 08:41
	89256-1-BLK	BLK	89256-1-BLK	W	89256	190925	01/21/2022 08:18	01/21/2022 10:39
	Effluent VSP-4 S	MS	22011911-001 S	W	89256	190925	01/21/2022 08:18	01/21/2022 14:26
	Effluent VSP-4 SD	MSD	22011911-001 S	W	89256	190925	01/21/2022 08:18	01/21/2022 14:49
SW-846 8260 B-Modified	Effluent VSP-4	Initial	22011912-001	W	89365	191135	01/31/2022 09:50	01/31/2022 15:37
	Inffluent VSP-1	Initial	22011912-002	W	89365	191135	01/31/2022 09:50	01/31/2022 16:22
	TB-011922	Initial	22011912-003	W	89365	191135	01/31/2022 09:50	01/31/2022 16:00
	89365-1-BKS	BKS	89365-1-BKS	W	89365	191135	01/31/2022 09:50	01/31/2022 14:31
	89365-1-BLK	BLK	89365-1-BLK	W	89365	191135	01/31/2022 09:50	01/31/2022 15:15
	89365-1-BSD	BSD	89365-1-BSD	W	89365	191135	01/31/2022 09:50	01/31/2022 14:53
SW-846 8260 D	Inffluent VSP-1	Initial	22011912-002	W	89253	190897	01/21/2022 08:41	01/21/2022 18:59
	89253-1-BKS	BKS	89253-1-BKS	W	89253	190897	01/21/2022 08:41	01/21/2022 08:41
	89253-1-BLK	BLK	89253-1-BLK	W	89253	190897	01/21/2022 08:41	01/21/2022 10:39
	G-13 (GW) S	MS	22011712-001 S	W	89253	190897	01/21/2022 08:41	01/21/2022 15:12
	G-13 (GW) SD	MSD	22011712-001 S	W	89253	190897	01/21/2022 08:41	01/21/2022 15:34

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 190925
Matrix: Water
Date Prep: 01/21/22
MB Sample Id: 89256-1-BLK
LCS Sample Id: 89256-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	47.53	95	60-140	ug/L	
Acrylonitrile	<5.000	50.00	37.64	75	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	35.65	71	54-148	ug/L	
Chloromethane	<1.000	50.00	33.28	67	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	43.95	88	5-195	ug/L	
Bromomethane	<1.000	50.00	29.10	58	15-185	ug/L	
Chloroethane	<1.000	50.00	35.55	71	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.53	93	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	27.46	55	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.52	91	50-150	ug/L	
Methylene Chloride	<1.000	50.00	41.93	84	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.58	93	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.09	90	70-130	ug/L	
Chloroform	<1.000	50.00	45.27	91	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.98	100	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.13	98	70-130	ug/L	
Benzene	<1.000	50.00	44.32	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.42	91	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.17	90	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.59	89	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	47.80	96	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.93	100	25-175	ug/L	
Toluene	<1.000	50.00	44.97	90	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	46.14	92	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.18	90	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.17	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.15	98	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.67	89	65-135	ug/L	
Ethylbenzene	<1.000	50.00	45.76	92	60-140	ug/L	
Bromoform	<1.000	50.00	47.88	96	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.36	87	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.04	92	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.18	90	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.05	94	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		102		87-120	%
4-Bromofluorobenzene	99		95		85-147	%
Toluene-D8	101		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 191135 Matrix: Water Date Prep: 01/31/22
MB Sample Id: 89365-1-BLK LCS Sample Id: 89365-1-BKS LCSD Sample Id: 89365-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	30.34	101	32.54	108	50-150	7	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		100		103		80-120	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 190897
Matrix: Water
Date Prep: 01/21/22
MB Sample Id: 89253-1-BLK
LCS Sample Id: 89253-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	42.82	86	26-128	ug/L	
Benzene	<1.000	50.00	44.32	89	82-115	ug/L	
Bromochloromethane	<1.000	50.00	47.21	94	91-115	ug/L	
Bromodichloromethane	<1.000	50.00	47.80	96	88-122	ug/L	
Bromoform	<1.000	50.00	47.88	96	79-122	ug/L	
Bromomethane	<1.000	50.00	29.10	58	50-143	ug/L	
2-Butanone (MEK)	<5.000	50.00	42.28	85	51-113	ug/L	
Carbon Disulfide	<1.000	50.00	48.16	96	71-132	ug/L	
Carbon tetrachloride	<1.000	50.00	49.13	98	85-125	ug/L	
Chlorobenzene	<1.000	50.00	44.67	89	80-116	ug/L	
Chloroethane	<1.000	50.00	35.55	71	58-115	ug/L	
Chloroform	<1.000	50.00	45.27	91	81-113	ug/L	
Chloromethane	<1.000	50.00	33.28	67	48-132	ug/L	
Cyclohexane	<1.000	50.00	51.14	102	81-125	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	42.10	84	63-122	ug/L	
Dibromochloromethane	<1.000	50.00	49.15	98	84-120	ug/L	
1,2-Dibromoethane	<1.000	50.00	46.65	93	82-122	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.05	94	79-122	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.04	92	79-122	ug/L	
Dichlorodifluoromethane	<1.000	50.00	35.65	71	73-126	ug/L	L
1,4-Dichlorobenzene	<1.000	50.00	45.18	90	79-119	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.09	90	70-121	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.42	91	78-118	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	46.55	93	76-116	ug/L	
1,1-Dichloroethene	<1.000	50.00	45.52	91	71-124	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.59	89	79-121	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.93	100	83-123	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	46.14	92	82-125	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	46.58	93	74-118	ug/L	
Ethylbenzene	<1.000	50.00	45.76	92	85-120	ug/L	
2-Hexanone (MBK)	<5.000	50.00	42.79	86	51-126	ug/L	
Isopropylbenzene	<1.000	50.00	48.29	97	84-125	ug/L	
Methyl Acetate	<1.000	50.00	38.91	78	75-114	ug/L	
Methylcyclohexane	<1.000	50.00	50.08	100	88-124	ug/L	
Methylene chloride	<1.000	50.00	41.93	84	70-117	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	41.34	83	63-112	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	43.43	87	70-127	ug/L	
Naphthalene	<1.000	50.00	42.25	85	71-138	ug/L	
Styrene	<1.000	50.00	49.56	99	78-121	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.36	87	70-118	ug/L	
Tetrachloroethene	<1.000	50.00	50.17	100	83-113	ug/L	
Toluene	<1.000	50.00	44.97	90	85-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	49.09	98	80-134	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	49.83	100	83-134	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.98	100	84-122	ug/L	
Trichloroethene	<1.000	50.00	45.17	90	82-117	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.18	90	82-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.53	93	71-123	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	47.05	94	72-126	ug/L	
Vinyl chloride	<1.000	50.00	43.95	88	75-113	ug/L	
m&p-Xylene	<2.000	100	93.59	94	87-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 190897
Matrix: Water
Date Prep: 01/21/22
MB Sample Id: 89253-1-BLK
LCS Sample Id: 89253-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	48.03	96	87-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	99		95		88-112	%
Dibromofluoromethane	106		102		93-111	%
Toluene-D8	101		100		94-107	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 B-Modified
Seq Number: 191135 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 01/31/22 14:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.42	101	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 191135 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/31/22 13:46

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.77	99	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 D

Seq Number: 190897 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 01/21/22 08:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	42.82	86	80-120	ug/L	
Benzene	50.00	44.32	89	80-120	ug/L	
Bromochloromethane	50.00	47.21	94	80-120	ug/L	
Bromodichloromethane	50.00	47.80	96	80-120	ug/L	
Bromoform	50.00	47.88	96	80-120	ug/L	
Bromomethane	50.00	29.10	58	80-120	ug/L	X
2-Butanone (MEK)	50.00	42.28	85	80-120	ug/L	
Carbon Disulfide	50.00	48.16	96	80-120	ug/L	
Carbon tetrachloride	50.00	49.13	98	80-120	ug/L	
Chlorobenzene	50.00	44.67	89	80-120	ug/L	
Chloroethane	50.00	35.55	71	80-120	ug/L	X
Chloroform	50.00	45.27	91	80-120	ug/L	
Chloromethane	50.00	33.28	67	80-120	ug/L	X
Cyclohexane	50.00	51.14	102	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	42.10	84	80-120	ug/L	
Dibromochloromethane	50.00	49.15	98	80-120	ug/L	
1,2-Dibromoethane	50.00	46.65	93	80-120	ug/L	
1,2-Dichlorobenzene	50.00	47.05	94	80-120	ug/L	
1,3-Dichlorobenzene	50.00	46.04	92	80-120	ug/L	
Dichlorodifluoromethane	50.00	35.65	71	80-120	ug/L	X
1,4-Dichlorobenzene	50.00	45.18	90	80-120	ug/L	
1,1-Dichloroethane	50.00	45.09	90	80-120	ug/L	
1,2-Dichloroethane	50.00	45.42	91	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	46.55	93	80-120	ug/L	
1,1-Dichloroethene	50.00	45.52	91	80-120	ug/L	
1,2-Dichloropropane	50.00	44.59	89	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	49.93	100	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	46.14	92	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	46.58	93	80-120	ug/L	
Ethylbenzene	50.00	45.76	92	80-120	ug/L	
2-Hexanone (MBK)	50.00	42.79	86	80-120	ug/L	
Isopropylbenzene	50.00	48.29	97	80-120	ug/L	
Methyl Acetate	50.00	38.91	78	80-120	ug/L	X
Methylcyclohexane	50.00	50.08	100	80-120	ug/L	
Methylene chloride	50.00	41.93	84	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	41.34	83	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	43.43	87	80-120	ug/L	
Naphthalene	50.00	42.25	85	80-120	ug/L	
Styrene	50.00	49.56	99	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	43.36	87	80-120	ug/L	
Tetrachloroethene	50.00	50.17	100	80-120	ug/L	
Toluene	50.00	44.97	90	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	49.09	98	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	49.83	100	80-120	ug/L	
1,1,1-Trichloroethane	50.00	49.98	100	80-120	ug/L	
Trichloroethene	50.00	45.17	90	80-120	ug/L	
1,1,2-Trichloroethane	50.00	45.18	90	80-120	ug/L	
Trichlorofluoromethane	50.00	46.53	93	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	47.05	94	80-120	ug/L	
Vinyl chloride	50.00	43.95	88	80-120	ug/L	
m&p-Xylene	100	93.59	94	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 D

Seq Number: 190897 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 01/21/22 08:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	48.03	96	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	95	80-120	%	
Dibromofluoromethane	102	80-120	%	
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 190497 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	46.09	92	70-130	ug/L	
Benzene	50.00	51.21	102	70-130	ug/L	
Bromochloromethane	50.00	52.52	105	70-130	ug/L	
Bromodichloromethane	50.00	52.63	105	70-130	ug/L	
Bromoform	50.00	50.62	101	70-130	ug/L	
Bromomethane	50.00	44.17	88	70-130	ug/L	
2-Butanone (MEK)	50.00	51.12	102	70-130	ug/L	
Carbon Disulfide	50.00	52.69	105	70-130	ug/L	
Carbon tetrachloride	50.00	51.72	103	70-130	ug/L	
Chlorobenzene	50.00	51.01	102	70-130	ug/L	
Chloroethane	50.00	46.89	94	70-130	ug/L	
Chloroform	50.00	50.67	101	70-130	ug/L	
Chloromethane	50.00	50.87	102	70-130	ug/L	
Cyclohexane	50.00	52.60	105	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	52.51	105	70-130	ug/L	
Dibromochloromethane	50.00	53.75	108	70-130	ug/L	
1,2-Dibromoethane	50.00	53.23	106	70-130	ug/L	
1,2-Dichlorobenzene	50.00	52.96	106	70-130	ug/L	
1,3-Dichlorobenzene	50.00	52.55	105	70-130	ug/L	
Dichlorodifluoromethane	50.00	48.76	98	70-130	ug/L	
1,4-Dichlorobenzene	50.00	51.93	104	70-130	ug/L	
1,1-Dichloroethane	50.00	51.14	102	70-130	ug/L	
1,2-Dichloroethane	50.00	51.17	102	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	51.40	103	70-130	ug/L	
1,1-Dichloroethene	50.00	51.10	102	70-130	ug/L	
1,2-Dichloropropane	50.00	51.34	103	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	54.59	109	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	49.86	100	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	52.36	105	70-130	ug/L	
Ethylbenzene	50.00	52.60	105	70-130	ug/L	
2-Hexanone (MBK)	50.00	52.18	104	70-130	ug/L	
Isopropylbenzene	50.00	54.76	110	70-130	ug/L	
Methyl Acetate	50.00	51.16	102	70-130	ug/L	
Methylcyclohexane	50.00	52.80	106	70-130	ug/L	
Methylene chloride	50.00	49.72	99	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.94	108	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	52.77	106	70-130	ug/L	
Naphthalene	50.00	52.49	105	70-130	ug/L	
Styrene	50.00	54.51	109	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	53.87	108	70-130	ug/L	
Tetrachloroethene	50.00	50.70	101	70-130	ug/L	
Toluene	50.00	51.10	102	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	55.85	112	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	55.63	111	70-130	ug/L	
1,1,1-Trichloroethane	50.00	52.02	104	70-130	ug/L	
Trichloroethene	50.00	51.60	103	70-130	ug/L	
1,1,2-Trichloroethane	50.00	52.10	104	70-130	ug/L	
Trichlorofluoromethane	50.00	50.37	101	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	51.12	102	70-130	ug/L	
Vinyl chloride	50.00	49.35	99	70-130	ug/L	
m&p-Xylene	100	105.1	105	70-130	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22011912

Analytical Method: SW-846 8260 D

Seq Number: 190497 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	52.03	104	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	101	70-130	%	
Dibromofluoromethane	100	70-130	%	
Toluene-D8	100	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22011912 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannan Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② / ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1,4 dioxane (8260 SIM)	VOCs (8260)	VOCs (624)								
							Analysis/ Method Required ③											
	~~Effluent~~ VSP-4	1/19/22	1115	WW	3	G	X											
	Influent VSP-1	1/19/22	1140	GW	6	G	X	X										
	TB-011922	1/19/22	—	—	4	—	X		X									Trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannan Burke	1/19/22	1320	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)

☐ 5-Day ☐ 3-Day ☐ 2-Day

☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:

☐ MD ☐ DE ☐ PA ☐ VA ☐ WV

☐ OTHER

COMPLIANCE?

☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres TB - 1.5°C

Custody Seal: Pres / Cooler Intact

Coolers: 1 Temp: 3.7-4.0°C

Shipping Carrier: Client

Special Instructions:

Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22011912

Client Name WSP USA - Herndon
Disposal Date 02/23/2022

Received By Marissa Vertucci
Date Received 01/19/2022 01:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.0
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 01/19/2022

PM Review and Approval: Amber Confer Date: 01/20/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020909

February 23, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22020909**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/004

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22020909**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 16, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22020909

Project ID: 31401545.010/004

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/09/2022 at 01:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22020909-001	Effluent VSP-4	WASTE WATER	02/09/22 12:40

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020909

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2022 12:40** **PSS Sample ID: 22020909-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2022 13:15**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**4.1**	ug/L	1.0		1	02/10/22	02/10/22 18:41	1064
Lead	ND	ug/L	1.0		1	02/10/22	02/10/22 18:41	1064
Nickel	**16.1**	ug/L	1.00		1	02/10/22	02/11/22 17:12	1064
Zinc	**35.5**	ug/L	20.0		1	02/10/22	02/10/22 18:41	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.3**	ug/L	1.0		1	02/10/22	02/10/22 22:14	1064
Lead	ND	ug/L	1.0		1	02/10/22	02/10/22 22:14	1064
Nickel	**14.9**	ug/L	1.00		1	02/10/22	02/11/22 18:54	1064
Zinc	**29.4**	ug/L	20.0		1	02/10/22	02/10/22 22:14	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	02/09/22	02/09/22 16:38	1011
Acrylonitrile	ND	ug/L	5.0		1	02/09/22	02/09/22 16:38	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Chloromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Vinyl Chloride	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Bromomethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Chloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Methylene Chloride	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Chloroform	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Benzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020909

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2022 12:40** **PSS Sample ID: 22020909-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2022 13:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Bromodichloromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Toluene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Tetrachloroethylene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Dibromochloromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Chlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Ethylbenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
Bromoform	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:38	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*102*	*%*	*87-120*	*1*	*02/09/22*	*02/09/22 16:38*	*1011*
4-Bromofluorobenzene	*96*	*%*	*85-147*	*1*	*02/09/22*	*02/09/22 16:38*	*1011*
Toluene-D8	*88*	*%*	*88-110*	*1*	*02/09/22*	*02/09/22 16:38*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**18**	mg/L	0.66		1	02/11/22	02/11/22 17:12	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020909

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2022 12:40** **PSS Sample ID: 22020909-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2022 13:15**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	02/13/22	02/13/22 16:05	1064

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 09-Feb-22 16:55

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	**22.4**	mg/L	10.0		02/09/22	02/14/22 13:00	4005

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Project Name: Kop-Flex

PSS Project No.: 22020909

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22020909: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22020909

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22020909-001	W	89497	191395	02/10/2022 12:20	02/10/2022 18:41
	89497-1-BKS	BKS	89497-1-BKS	W	89497	191395	02/10/2022 12:20	02/10/2022 18:08
	89497-1-BLK	BLK	89497-1-BLK	W	89497	191395	02/10/2022 12:20	02/10/2022 18:03
	D2012022-001 S	MS	22020817-001 S	W	89497	191395	02/10/2022 12:20	02/10/2022 18:17
	RB-9D-02082022 S	MS	22020917-011 S	W	89497	191395	02/10/2022 12:20	02/10/2022 20:04
	D2012022-001 SD	MSD	22020817-001 S	W	89497	191395	02/10/2022 12:20	02/10/2022 18:22
	Effluent VSP-4	Reanalysis	22020909-001	W	89497	191445	02/10/2022 12:20	02/11/2022 17:12
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22020909-001	W	89503	191399	02/10/2022 16:06	02/10/2022 22:14
	89503-1-BKS	BKS	89503-1-BKS	W	89503	191399	02/10/2022 15:22	02/10/2022 20:22
	89503-1-BLK	BLK	89503-1-BLK	W	89503	191399	02/10/2022 15:22	02/10/2022 20:18
	B-5-02082022 S	MS	22020917-001 S	W	89503	191399	02/10/2022 15:22	02/10/2022 20:32
	Downstream S	MS	22021017-002 S	W	89503	191399	02/10/2022 15:22	02/10/2022 22:09
	B-5-02082022 SD	MSD	22020917-001 S	W	89503	191399	02/10/2022 15:22	02/10/2022 20:36
	89503-1-BKS	Reanalysis	89503-1-BKS	W	89503	191448	02/10/2022 15:22	02/11/2022 17:58
	89503-1-BLK	Reanalysis	89503-1-BLK	W	89503	191448	02/10/2022 15:22	02/11/2022 17:54
	Effluent VSP-4	Reanalysis	22020909-001	W	89503	191448	02/10/2022 16:06	02/11/2022 18:54
EPA 624 .1	Effluent VSP-4	Initial	22020909-001	W	89492	191354	02/09/2022 09:29	02/09/2022 16:38
	89492-1-BKS	BKS	89492-1-BKS	W	89492	191354	02/09/2022 09:29	02/09/2022 09:51
	89492-1-BLK	BLK	89492-1-BLK	W	89492	191354	02/09/2022 09:29	02/09/2022 11:35
	D2012022-001 S	MS	22020817-001 S	W	89492	191354	02/09/2022 09:29	02/09/2022 14:45
	D2012022-001 SD	MSD	22020817-001 S	W	89492	191354	02/09/2022 09:29	02/09/2022 15:07
SM 2340B	Effluent VSP-4	Initial	22020909-001	W	89497	191445	02/14/2022 12:18	02/11/2022 17:12
SM 2540D -2015	Effluent VSP-4	Initial	22020909-001	W	191431	191431	02/13/2022 16:05	02/13/2022 16:05
	191431-1-BKS	BKS	191431-1-BKS	W	191431	191431	02/13/2022 16:05	02/13/2022 16:05
	191431-1-BLK	BLK	191431-1-BLK	W	191431	191431	02/13/2022 16:05	02/13/2022 16:05
	TSS D	MD	22020902-001 D	W	191431	191431	02/13/2022 16:05	02/13/2022 16:05
	Surge Out D	MD	22021111-002 D	W	191431	191431	02/13/2022 16:05	02/13/2022 16:05
SM 5210B -2011	Effluent VSP-4	Initial	22020909-001	W	191540	191540	02/09/2022 16:55	02/14/2022 13:00

Analytical Method: SM 2540D -2015

Seq Number: 191431 Matrix: Water
MB Sample Id: 191431-1-BLK LCS Sample Id: 191431-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	100.4	98.80	98	80-120	mg/L	

Analytical Method: EPA 200.8

Prep Method: E200.8_PREP
Seq Number: 191395 Matrix: Water Date Prep: 02/10/22
MB Sample Id: 89497-1-BLK LCS Sample Id: 89497-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	44.75	90	85-115	ug/L	
Lead	<1.000	50.00	43.87	88	85-115	ug/L	
Nickel	<1.000	50.00	45.35	91	85-115	ug/L	
Zinc	<20.00	100	87.67	88	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Prep Method: E200.8_PREP
Seq Number: 191399 Matrix: Water Date Prep: 02/10/22
MB Sample Id: 89503-1-BLK LCS Sample Id: 89503-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	46.62	93	85-115	ug/L	
Lead	<1.000	50.00	44.84	90	85-115	ug/L	
Zinc	<20.00	100	93.49	93	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Prep Method: E200.8_PREP
Seq Number: 191448 Matrix: Water Date Prep: 02/10/22
MB Sample Id: 89503-1-BLK LCS Sample Id: 89503-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	50.00	47.89	96	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22020909

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 191354
Matrix: Water
Date Prep: 02/09/22
MB Sample Id: 89492-1-BLK
LCS Sample Id: 89492-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	54.18	108	60-140	ug/L	
Acrylonitrile	<5.000	50.00	37.60	75	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	45.99	92	54-148	ug/L	
Chloromethane	<1.000	50.00	46.88	94	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	53.37	107	5-195	ug/L	
Bromomethane	<1.000	50.00	44.33	89	15-185	ug/L	
Chloroethane	<1.000	50.00	42.57	85	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.25	99	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	22.66	45	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.16	88	50-150	ug/L	
Methylene Chloride	<1.000	50.00	42.30	85	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.43	91	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	42.77	86	70-130	ug/L	
Chloroform	<1.000	50.00	43.96	88	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.58	91	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	44.23	88	70-130	ug/L	
Benzene	<1.000	50.00	44.48	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	41.89	84	70-130	ug/L	
Trichloroethene	<1.000	50.00	42.96	86	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	42.27	85	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	39.38	79	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	41.94	84	25-175	ug/L	
Toluene	<1.000	50.00	39.65	79	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	38.35	77	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	38.26	77	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	44.68	89	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	45.09	90	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.07	88	65-135	ug/L	
Ethylbenzene	<1.000	50.00	44.80	90	60-140	ug/L	
Bromoform	<1.000	50.00	42.16	84	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	38.43	77	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.26	89	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	43.64	87	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.11	88	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		101		87-120	%
4-Bromofluorobenzene	93		92		85-147	%
Toluene-D8	101		89		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 191395 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 02/10/22 18:54

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	52.32	105	85-115	ug/L	
Lead	50.00	50.71	101	85-115	ug/L	
Zinc	100	102.9	103	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191395 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/10/22 19:54

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	52.17	104	85-115	ug/L	
Lead	50.00	49.48	99	85-115	ug/L	
Zinc	100	104.3	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191395 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/10/22 20:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	52.19	104	85-115	ug/L	
Lead	50.00	49.31	99	85-115	ug/L	
Zinc	100	104.1	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191445 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 02/11/22 17:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	53.85	108	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191445 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/11/22 18:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	52.21	104	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191445 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/11/22 19:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	52.30	105	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191445 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 02/11/22 20:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	52.48	105	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191395 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/10/22 17:31

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.74	101	90-110	ug/L	
Lead	50.00	51.67	103	90-110	ug/L	
Zinc	100	98.76	99	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 191445 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/11/22 16:16

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	50.00	52.91	106	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191399 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/10/22 19:54

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	52.17	104	85-115	ug/L	
Lead	50.00	49.48	99	85-115	ug/L	
Zinc	100	104.3	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191399 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/10/22 20:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	52.19	104	85-115	ug/L	
Lead	50.00	49.31	99	85-115	ug/L	
Zinc	100	104.1	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191399 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 02/10/22 21:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	51.16	102	85-115	ug/L	
Lead	50.00	48.86	98	85-115	ug/L	
Zinc	100	103	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191399 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 02/10/22 22:28

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	50.65	101	85-115	ug/L	
Lead	50.00	49.31	99	85-115	ug/L	
Zinc	100	101.5	102	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191448 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 02/11/22 17:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	53.85	108	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191448 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 02/11/22 18:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	52.21	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191448 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 02/11/22 19:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	52.30	105	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191448 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 02/11/22 20:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	52.48	105	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191448 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 02/11/22 21:09

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	50.00	51.59	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191399 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/10/22 17:31

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.74	101	90-110	ug/L	
Lead	50.00	51.67	103	90-110	ug/L	
Zinc	100	98.76	99	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 191448 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 02/11/22 16:16

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	50.00	52.91	106	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22020909

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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①

PSS CLIENT: WSP USA	OFFICE LOCATION: Herndon, VA	PSS Work Order #: 22020909	PAGE 1 OF 1
BILL TO (if different):	PHONE #: 703-709-6500		
CONTACT: Eric Johnson	EMAIL: eric.johnson@wsp.com		
PROJECT NAME: Kop-Flex	PROJECT #: 31401545.010/04		
SITE LOCATION: Hanover, MD	P.O. #:		
SAMPLER(S): Shannon Burke	DW CERT #:		

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

②

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1,6	3	3	6	6							
							Analysis/ Method Required ③	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD							
	Effluent VSP-4	2/9/22	1240	WW	7	G		X	X	X	X	X							

Preservative Codes: 1 - HCl; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
[signature]	2/9/22	1315	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER _____

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres Temp blank-3.9°C

Custody Seal: Pres/Cooler Intact

Coolers: 1 Temp: 3.4-3.9°C

Shipping Carrier: Client

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22020909

Client Name WSP USA - Herndon
Disposal Date 03/16/2022

Received By Marissa Vertucci
Date Received 02/09/2022 01:15:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	3.9
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 02/09/2022

PM Review and Approval: Amber Confer Date: 02/10/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020910

February 23, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22020910**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 21401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22020910**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 16, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22020910

Project ID: 21401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/09/2022 at 01:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22020910-001	Effluent VSP-4	WASTE WATER	02/09/22 12:40
22020910-002	TB	WATER	02/09/22 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020910

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/09/2022 12:40** **PSS Sample ID: 22020910-001**
Matrix: WASTE WATER **Date/Time Received: 02/09/2022 13:15**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**3.0**	ug/L	1.0		1	02/22/22	02/22/22 14:15	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*99*	*%*	*80-120*		*1*	*02/22/22*	*02/22/22 14:15*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020910

Sample ID: TB **Date/Time Sampled: 02/09/2022 00:00** **PSS Sample ID: 22020910-002**
Matrix: WATER **Date/Time Received: 02/09/2022 13:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	02/09/22	02/09/22 16:15	1011
Acrylonitrile	ND	ug/L	5.0		1	02/09/22	02/09/22 16:15	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Chloromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Vinyl Chloride	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Bromomethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Chloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Methylene Chloride	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Chloroform	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Benzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Trichloroethene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Bromodichloromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Toluene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Tetrachloroethylene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Dibromochloromethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Chlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Ethylbenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
Bromoform	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	02/09/22	02/09/22 16:15	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22020910

Sample ID: TB **Date/Time Sampled: 02/09/2022 00:00** **PSS Sample ID: 22020910-002**
Matrix: WATER **Date/Time Received: 02/09/2022 13:15**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*108*	*%*	*87-120*	*1*	*02/09/22*	*02/09/22 16:15*	*1011*
4-Bromofluorobenzene	*94*	*%*	*85-147*	*1*	*02/09/22*	*02/09/22 16:15*	*1011*
Toluene-D8	*94*	*%*	*88-110*	*1*	*02/09/22*	*02/09/22 16:15*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	02/22/22	02/22/22 14:37	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*100*	*%*	*80-120*	*1*	*02/22/22*	*02/22/22 14:37*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22020910

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22020910

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB	Initial	22020910-002	W	89492	191354	02/09/2022 09:29	02/09/2022 16:15
	89492-1-BKS	BKS	89492-1-BKS	W	89492	191354	02/09/2022 09:29	02/09/2022 09:51
	89492-1-BLK	BLK	89492-1-BLK	W	89492	191354	02/09/2022 09:29	02/09/2022 11:35
	D2012022-001 S	MS	22020817-001 S	W	89492	191354	02/09/2022 09:29	02/09/2022 14:45
	D2012022-001 SD	MSD	22020817-001 S	W	89492	191354	02/09/2022 09:29	02/09/2022 15:07
SW-846 8260 B-Modified	Effluent VSP-4	Initial	22020910-001	W	89676	191729	02/22/2022 08:15	02/22/2022 14:15
	TB	Initial	22020910-002	W	89676	191729	02/22/2022 08:15	02/22/2022 14:37
	89676-1-BKS	BKS	89676-1-BKS	W	89676	191729	02/22/2022 08:15	02/22/2022 12:46
	89676-1-BLK	BLK	89676-1-BLK	W	89676	191729	02/22/2022 08:15	02/22/2022 13:52
	89676-1-BSD	BSD	89676-1-BSD	W	89676	191729	02/22/2022 08:15	02/22/2022 13:08

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22020910

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 191354
Matrix: Water
Date Prep: 02/09/22
MB Sample Id: 89492-1-BLK
LCS Sample Id: 89492-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	54.18	108	60-140	ug/L	
Acrylonitrile	<5.000	50.00	37.60	75	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	45.99	92	54-148	ug/L	
Chloromethane	<1.000	50.00	46.88	94	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	53.37	107	5-195	ug/L	
Bromomethane	<1.000	50.00	44.33	89	15-185	ug/L	
Chloroethane	<1.000	50.00	42.57	85	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.25	99	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	22.66	45	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.16	88	50-150	ug/L	
Methylene Chloride	<1.000	50.00	42.30	85	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.43	91	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	42.77	86	70-130	ug/L	
Chloroform	<1.000	50.00	43.96	88	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.58	91	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	44.23	88	70-130	ug/L	
Benzene	<1.000	50.00	44.48	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	41.89	84	70-130	ug/L	
Trichloroethene	<1.000	50.00	42.96	86	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	42.27	85	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	39.38	79	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	41.94	84	25-175	ug/L	
Toluene	<1.000	50.00	39.65	79	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	38.35	77	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	38.26	77	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	44.68	89	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	45.09	90	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.07	88	65-135	ug/L	
Ethylbenzene	<1.000	50.00	44.80	90	60-140	ug/L	
Bromoform	<1.000	50.00	42.16	84	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	38.43	77	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.26	89	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	43.64	87	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.11	88	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		101		87-120	%
4-Bromofluorobenzene	93		92		85-147	%
Toluene-D8	101		89		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22020910

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 191729 Matrix: Water Date Prep: 02/22/22
MB Sample Id: 89676-1-BLK LCS Sample Id: 89676-1-BKS LCSD Sample Id: 89676-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	30.35	101	32.68	109	50-150	8	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	101		98		102		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22020910

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22020910

Analytical Method: SW-846 8260 B-Modified
Seq Number: 191729 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 02/22/22 12:23

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.22	104	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 191729 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 02/22/22 12:01

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.37	105	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2202010 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservatives Use Codes: 1 | 1

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	1,4-dioxane (5260 SIM)	VOCs (624)	
	Effluent VSP-4	2/9/22	1240	WW	3	G	X		
	TB-	—	—	—	4	—	X	X	Trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
Alex Burke	2/9/22	1315	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres TB-3.9°C

Custody Seal: Pres/Cooler Intact

Coolers: 1 Temp: 3.4-3.9°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22020910

Client Name WSP USA - Herndon
Disposal Date 03/16/2022

Received By Marissa Vertucci
Date Received 02/09/2022 01:15:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	3.9
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	2
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 02/09/2022

PM Review and Approval: Amber Confer Date: 02/10/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22021507

February 18, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22021507**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22021507**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 22, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22021507

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/15/2022 at 12:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22021507-001	Effluent VSP-4	WASTE WATER	02/15/22 10:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22021507

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/15/2022 10:30** **PSS Sample ID: 22021507-001**
Matrix: WASTE WATER **Date/Time Received: 02/15/2022 12:20**

Chemical Oxygen Demand — Analytical Method: SM 5220D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chemical Oxygen Demand	ND	mg/L	20		1	02/18/22	02/18/22 13:39	1059

Total Organic Carbon — Analytical Method: SM 5310C -2000

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Total Organic Carbon	ND	mg/L	1.0		02/18/22	02/18/22 11:31	4020

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Project Name: Kop-Flex

PSS Project No.: 22021507

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

TOC sample preserved with H3PO4

22021507: Analyses associated with analyst code 4020 were performed by
Eurofins Lancaster Labs - PA, 2425 New Holland Pike, Lancaster, PA 17601 - PA 36-00037 VA 00187

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22021507

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM 5220D -2011	Effluent VSP-4	Initial	22021507-001	W	191614	191614	02/18/2022 13:39	02/18/2022 13:39
	191614-1-BKS	BKS	191614-1-BKS	W	191614	191614	02/18/2022 13:39	02/18/2022 13:39
	191614-1-BLK	BLK	191614-1-BLK	W	191614	191614	02/18/2022 13:39	02/18/2022 13:39
	Condensate S	MS	22021506-001 S	W	191614	191614	02/18/2022 13:39	02/18/2022 13:39
	Condensate SD	MSD	22021506-001 S	W	191614	191614	02/18/2022 13:39	02/18/2022 13:39
SM 5310C -2000	Effluent VSP-4	Initial	22021507-001	W	191620	191620	02/18/2022 11:31	02/18/2022 11:31

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22021507

Analytical Method: SM 5220D -2011

Seq Number: 191614 Matrix: Water

MB Sample Id: 191614-1-BLK LCS Sample Id: 191614-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Chemical Oxygen Demand	<20.00	483.5	512.3	106	80-120	mg/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22021507

Analytical Method: SM 5220D -2011
Seq Number: 191614 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 02/18/22 13:39

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Chemical Oxygen Demand	483.5	504.9	104	90-110	mg/L	

Analytical Method: SM 5220D -2011
Seq Number: 191614 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 02/18/22 13:39

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Chemical Oxygen Demand	483.5	504.5	104	90-110	mg/L	

Analytical Method: SM 5220D -2011
Seq Number: 175113 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/10/19 14:24

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Chemical Oxygen Demand	1004	1039	103	85-115	mg/L	

Analytical Method: SM 5220D -2011
Seq Number: 191614 Matrix: Water
Parent Sample Id: MRL-01 MRL Sample Id: MRL-01 Analyzed Date: 02/18/22 13:39

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Chemical Oxygen Demand	20.00	18.70	94	50-150	mg/L	

X = Recovery outside of QC Criteria

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All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kap-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 2202150 7 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservatives Use Codes: H_3PO_4 = 2

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required: TOC (SM 5310C)	COD (SM 5220D)
	Effluent VSP-4	2/15/22	1030	WW	3	G	X	X

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	2/15/22	1220	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres TB-2.8°C

Custody Seal: Cooler Intact/Pres

Coolers: 1 Temp: 2.4-2.6°C

Shipping Carrier: Client

Special Instructions: 4-Day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22021507

Client Name WSP USA - Herndon
Disposal Date 03/22/2022

Received By Marissa Vertucci
Date Received 02/15/2022 12:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.6
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	6

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	Yes
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

TOC sample preserved with H3PO4

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 02/15/2022

PM Review and Approval: Amber Confer Date: 02/15/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031721

March 31, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22031721**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22031721**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 21, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

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We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22031721

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/17/2022 at 02:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22031721-001	Effluent VSP-4	WASTE WATER	03/17/22 13:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031721

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/17/2022 13:15** **PSS Sample ID: 22031721-001**
Matrix: WASTE WATER **Date/Time Received: 03/17/2022 14:00**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.1**	ug/L	1.0		1	03/22/22	03/22/22 17:21	1064
Lead	ND	ug/L	1.0		1	03/22/22	03/22/22 17:21	1064
Nickel	**20.0**	ug/L	1.00		1	03/22/22	03/22/22 17:21	1064
Zinc	**34.6**	ug/L	20.0		1	03/22/22	03/22/22 17:21	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	03/22/22	03/22/22 16:20	1064
Lead	ND	ug/L	1.0		1	03/22/22	03/22/22 16:20	1064
Nickel	**19.4**	ug/L	1.00		1	03/22/22	03/22/22 16:20	1064
Zinc	**32.9**	ug/L	20.0		1	03/22/22	03/22/22 16:20	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	03/18/22	03/18/22 11:34	1011
Acrylonitrile	ND	ug/L	5.0		1	03/18/22	03/18/22 11:34	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Chloromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Vinyl Chloride	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Bromomethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Chloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Methylene Chloride	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Chloroform	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Benzene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031721

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/17/2022 13:15** **PSS Sample ID: 22031721-001**
Matrix: WASTE WATER **Date/Time Received: 03/17/2022 14:00**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=6

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Bromodichloromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Toluene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Tetrachloroethylene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Dibromochloromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Chlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Ethylbenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
Bromoform	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 11:34	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*101*	*%*	*87-120*	*1*	*03/18/22*	*03/18/22 11:34*	*1011*
4-Bromofluorobenzene	*102*	*%*	*85-147*	*1*	*03/18/22*	*03/18/22 11:34*	*1011*
Toluene-D8	*98*	*%*	*88-110*	*1*	*03/18/22*	*03/18/22 11:34*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**21**	mg/L	0.66		1	03/22/22	03/22/22 17:21	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031721

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/17/2022 13:15** **PSS Sample ID: 22031721-001**
Matrix: WASTE WATER **Date/Time Received: 03/17/2022 14:00**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	**1.7**	mg/L	1.0		1	03/22/22	03/22/22 16:15	1064

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 18-Mar-22 15:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		03/18/22	03/23/22 13:00	4005

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Project Name: Kop-Flex

PSS Project No.: 22031721

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22031721: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22031721

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22031721-001	W	90038	192551	03/22/2022 08:20	03/22/2022 17:21
	90038-1-BKS	BKS	90038-1-BKS	W	90038	192551	03/22/2022 08:20	03/22/2022 16:43
	90038-1-BLK	BLK	90038-1-BLK	W	90038	192551	03/22/2022 08:20	03/22/2022 16:39
	Water Sample S	MS	22031712-001 S	W	90038	192551	03/22/2022 08:20	03/22/2022 17:07
	Water Sample SD	MSD	22031712-001 S	W	90038	192551	03/22/2022 08:20	03/22/2022 17:11
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22031721-001	W	90039	192583	03/22/2022 07:30	03/22/2022 16:20
	90039-1-BKS	BKS	90039-1-BKS	W	90039	192583	03/22/2022 07:30	03/22/2022 16:15
	90039-1-BLK	BLK	90039-1-BLK	W	90039	192583	03/22/2022 07:30	03/22/2022 16:10
	Effluent VSP-4 S	MS	22031721-001 S	W	90039	192583	03/22/2022 07:30	03/22/2022 16:25
	Effluent VSP-4 SD	MSD	22031721-001 S	W	90039	192583	03/22/2022 07:30	03/22/2022 16:29
EPA 624 .1	Effluent VSP-4	Initial	22031721-001	W	90011	192451	03/18/2022 08:40	03/18/2022 11:34
	90011-1-BKS	BKS	90011-1-BKS	W	90011	192451	03/18/2022 08:40	03/18/2022 09:03
	90011-1-BLK	BLK	90011-1-BLK	W	90011	192451	03/18/2022 08:40	03/18/2022 10:49
	Discharge -031622 S	MS	22031713-001 S	W	90011	192451	03/18/2022 08:40	03/18/2022 14:59
	Discharge -031622 SD	MSD	22031713-001 S	W	90011	192451	03/18/2022 08:40	03/18/2022 15:21
SM 2340B	Effluent VSP-4	Initial	22031721-001	W	90038	192551	03/22/2022 08:20	03/22/2022 17:21
SM 2540D -2015	Effluent VSP-4	Initial	22031721-001	W	192535	192535	03/22/2022 16:15	03/22/2022 16:15
	192535-1-BKS	BKS	192535-1-BKS	W	192535	192535	03/22/2022 16:15	03/22/2022 16:15
	192535-1-BLK	BLK	192535-1-BLK	W	192535	192535	03/22/2022 16:15	03/22/2022 16:15
	Murphy Property D	MD	22031711-003 D	W	192535	192535	03/22/2022 16:15	03/22/2022 16:15
	Outfall -002 D	MD	22031817-001 D	W	192535	192535	03/22/2022 16:15	03/22/2022 16:15
SM 5210B -2011	Effluent VSP-4	Initial	22031721-001	W	192728	192728	03/18/2022 15:00	03/23/2022 13:00

Project Name Kop-Flex
PSS Project No.: 22031721

Analytical Method: SM 2540D -2015
Seq Number: 192535 Matrix: Water
MB Sample Id: 192535-1-BLK LCS Sample Id: 192535-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	103	101.1	98	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 192551 Matrix: Water Date Prep: 03/22/22
MB Sample Id: 90038-1-BLK LCS Sample Id: 90038-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	47.00	94	85-115	ug/L	
Lead	<1.000	50.00	43.93	88	85-115	ug/L	
Nickel	<1.000	50.00	45.47	91	85-115	ug/L	
Zinc	<20.00	100	96.36	96	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 192583 Matrix: Water Date Prep: 03/22/22
MB Sample Id: 90039-1-BLK LCS Sample Id: 90039-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	46.84	94	85-115	ug/L	
Lead	<1.000	50.00	44.66	89	85-115	ug/L	
Nickel	<1.000	50.00	46.39	93	85-115	ug/L	
Zinc	<20.00	100	97.35	97	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 192583 Matrix: Waste Water Date Prep: 03/22/22
Parent Sample Id: 22031721-001 MS Sample Id: 22031721-001 S MSD Sample Id: 22031721-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	<1.000	50.00	48.05	96	48.28	97	70-130	0	25	ug/L	
Lead	<1.000	50.00	43.79	88	44.09	88	70-130	1	25	ug/L	
Nickel	19.36	50.00	65.66	93	65.69	93	70-130	0	25	ug/L	
Zinc	32.91	100	127.3	94	127.2	94	70-130	0	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031721

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 192451
Matrix: Water
Date Prep: 03/18/22
MB Sample Id: 90011-1-BLK
LCS Sample Id: 90011-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	59.14	118	60-140	ug/L	
Acrylonitrile	<5.000	50.00	46.26	93	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	37.72	75	54-148	ug/L	
Chloromethane	<1.000	50.00	42.33	85	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	50.75	102	5-195	ug/L	
Bromomethane	<1.000	50.00	42.51	85	15-185	ug/L	
Chloroethane	<1.000	50.00	40.41	81	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.37	95	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	14.65	29	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.60	99	50-150	ug/L	
Methylene Chloride	<1.000	50.00	46.00	92	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.87	100	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.93	98	70-130	ug/L	
Chloroform	<1.000	50.00	46.14	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.57	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.43	95	70-130	ug/L	
Benzene	<1.000	50.00	47.31	95	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.88	90	70-130	ug/L	
Trichloroethene	<1.000	50.00	46.95	94	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.53	97	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.45	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.23	104	25-175	ug/L	
Toluene	<1.000	50.00	47.44	95	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.93	96	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.70	97	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.06	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.65	99	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.36	95	65-135	ug/L	
Ethylbenzene	<1.000	50.00	48.39	97	60-140	ug/L	
Bromoform	<1.000	50.00	46.96	94	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.60	99	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.87	98	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.10	96	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.05	98	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		99		87-120	%
4-Bromofluorobenzene	101		101		85-147	%
Toluene-D8	99		99		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 192551 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 03/22/22 15:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	49.56	99	85-115	ug/L	
Lead	50.00	47.93	96	85-115	ug/L	
Nickel	50.00	49.98	100	85-115	ug/L	
Zinc	100	101.8	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 192551 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 03/22/22 16:57

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.81	98	85-115	ug/L	
Lead	50.00	47.87	96	85-115	ug/L	
Nickel	50.00	47.78	96	85-115	ug/L	
Zinc	100	101	101	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 192551 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 03/22/22 17:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	51.09	102	85-115	ug/L	
Lead	50.00	47.62	95	85-115	ug/L	
Nickel	50.00	50.70	101	85-115	ug/L	
Zinc	100	105.2	105	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 192551 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/22/22 12:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.06	98	90-110	ug/L	
Lead	50.00	48.69	97	90-110	ug/L	
Nickel	50.00	49.42	99	90-110	ug/L	
Zinc	100	100.5	101	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 192583 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 03/22/22 14:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	50.12	100	85-115	ug/L	
Lead	50.00	48.14	96	85-115	ug/L	
Nickel	50.00	50.56	101	85-115	ug/L	
Zinc	100	102.9	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 192583 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 03/22/22 14:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	50.17	100	85-115	ug/L	
Lead	50.00	48.28	97	85-115	ug/L	
Nickel	50.00	50.61	101	85-115	ug/L	
Zinc	100	103	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 192583 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 03/22/22 15:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	49.56	99	85-115	ug/L	
Lead	50.00	47.93	96	85-115	ug/L	
Nickel	50.00	49.98	100	85-115	ug/L	
Zinc	100	101.8	102	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 192583 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 03/22/22 16:57

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.81	98	85-115	ug/L	
Lead	50.00	47.87	96	85-115	ug/L	
Nickel	50.00	47.78	96	85-115	ug/L	
Zinc	100	101	101	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031721

Analytical Method: EPA 200.8 Dissolved

Seq Number: 192583 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/22/22 12:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.06	98	90-110	ug/L	
Lead	50.00	48.69	97	90-110	ug/L	
Nickel	50.00	49.42	99	90-110	ug/L	
Zinc	100	100.5	101	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031721

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

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email: info@phaseonline.com

(1)

*CLIENT: WSP USA *OFFICE LOC. Herndon, VA

*PROJECT MGR: Eric Johnson *PHONE NO.: (703) 709-6500

EMAIL: eric.johnson@wsp.com FAX NO.: ( )

*PROJECT NAME: Kap-Flex PROJECT NO.: 31401545.010/04

SITE LOCATION: Hanover, MD P.O. NO.:

SAMPLER(S): Shannon Burke DW CERT NO.:

PSS Work Order #: 2203172 1 PAGE 1 OF 1

Matrix Codes:
SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE (C = COMP, G = GRAB)	Preservatives Used	HCl, ice	HNO3	HNO3	ice	ice							
							Analysis/ Method Required (3) *	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	BOD	TSS							REMARKS
1	~~Effluent~~ VSP-4	3/17/22	1315	WW	7	G		X	X	X	X	X							

(5)

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	3/17/22	1400	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

Data Deliverables Required:
COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER ____

of Coolers: 1 TB = 5.0°C

Custody Seal: Pres / Cooler Intact

Ice Present: Pres Temp: 5.4-5.8°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT
Dissolved metals field-filtered
metals = Cu, Pb, Ni, Zn

DW COMPLIANCE? YES ☐

EDD FORMAT TYPE ____

STATE RESULTS REPORTED TO:
MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER ____

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The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22031721

Client Name WSP USA - Herndon
Disposal Date 04/21/2022

Received By Marissa Vertucci
Date Received 03/17/2022 02:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	5.8
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 03/17/2022

PM Review and Approval: Amber Confer Date: 03/18/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031722

March 31, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22031722**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22031722**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 21, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22031722

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/17/2022 at 02:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22031722-001	Effluent VSP-4	WASTE WATER	03/17/22 13:15
22031722-002	TB-031722	WATER	03/17/22 14:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031722

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/17/2022 13:15** **PSS Sample ID: 22031722-001**
Matrix: WASTE WATER **Date/Time Received: 03/17/2022 14:00**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 B-Modified — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	03/29/22	03/29/22 17:59	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*104*	*%*	*80-120*		*1*	*03/29/22*	*03/29/22 17:59*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031722

Sample ID: TB-031722 **Date/Time Sampled: 03/17/2022 14:00** **PSS Sample ID: 22031722-002**
Matrix: WATER **Date/Time Received: 03/17/2022 14:00**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	03/18/22	03/18/22 14:36	1011
Acrylonitrile	ND	ug/L	5.0		1	03/18/22	03/18/22 14:36	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Chloromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Vinyl Chloride	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Bromomethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Chloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Methylene Chloride	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Chloroform	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Benzene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Trichloroethene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Bromodichloromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Toluene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Tetrachloroethylene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Dibromochloromethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Chlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Ethylbenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
Bromoform	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	03/18/22	03/18/22 14:36	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22031722

Sample ID: TB-031722 **Date/Time Sampled: 03/17/2022 14:00** **PSS Sample ID: 22031722-002**
Matrix: WATER **Date/Time Received: 03/17/2022 14:00**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*103*	*%*	*87-120*	*1*	*03/18/22*	*03/18/22 14:36*	*1011*
4-Bromofluorobenzene	*101*	*%*	*85-147*	*1*	*03/18/22*	*03/18/22 14:36*	*1011*
Toluene-D8	*98*	*%*	*88-110*	*1*	*03/18/22*	*03/18/22 14:36*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	03/29/22	03/29/22 18:21	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*94*	*%*	*80-120*	*1*	*03/29/22*	*03/29/22 18:21*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22031722

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22031722

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-031722	Initial	22031722-002	W	90011	192451	03/18/2022 08:40	03/18/2022 14:36
	90011-1-BKS	BKS	90011-1-BKS	W	90011	192451	03/18/2022 08:40	03/18/2022 09:03
	90011-1-BLK	BLK	90011-1-BLK	W	90011	192451	03/18/2022 08:40	03/18/2022 10:49
	Discharge -031622 S	MS	22031713-001 S	W	90011	192451	03/18/2022 08:40	03/18/2022 14:59
	Discharge -031622 SD	MSD	22031713-001 S	W	90011	192451	03/18/2022 08:40	03/18/2022 15:21
SW-846 8260 B-Modified	Effluent VSP-4	Initial	22031722-001	W	90159	192712	03/29/2022 09:09	03/29/2022 17:59
	TB-031722	Initial	22031722-002	W	90159	192712	03/29/2022 09:09	03/29/2022 18:21
	90159-1-BKS	BKS	90159-1-BKS	W	90159	192712	03/29/2022 09:09	03/29/2022 16:30
	90159-1-BLK	BLK	90159-1-BLK	W	90159	192712	03/29/2022 09:09	03/29/2022 17:37
	90159-1-BSD	BSD	90159-1-BSD	W	90159	192712	03/29/2022 09:09	03/29/2022 16:52

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031722

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 192451
Matrix: Water
Date Prep: 03/18/22
MB Sample Id: 90011-1-BLK
LCS Sample Id: 90011-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	59.14	118	60-140	ug/L	
Acrylonitrile	<5.000	50.00	46.26	93	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	37.72	75	54-148	ug/L	
Chloromethane	<1.000	50.00	42.33	85	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	50.75	102	5-195	ug/L	
Bromomethane	<1.000	50.00	42.51	85	15-185	ug/L	
Chloroethane	<1.000	50.00	40.41	81	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.37	95	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	14.65	29	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.60	99	50-150	ug/L	
Methylene Chloride	<1.000	50.00	46.00	92	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.87	100	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.93	98	70-130	ug/L	
Chloroform	<1.000	50.00	46.14	92	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.57	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.43	95	70-130	ug/L	
Benzene	<1.000	50.00	47.31	95	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.88	90	70-130	ug/L	
Trichloroethene	<1.000	50.00	46.95	94	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.53	97	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.45	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.23	104	25-175	ug/L	
Toluene	<1.000	50.00	47.44	95	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.93	96	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.70	97	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.06	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.65	99	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.36	95	65-135	ug/L	
Ethylbenzene	<1.000	50.00	48.39	97	60-140	ug/L	
Bromoform	<1.000	50.00	46.96	94	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.60	99	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.87	98	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.10	96	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.05	98	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		99		87-120	%
4-Bromofluorobenzene	101		101		85-147	%
Toluene-D8	99		99		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031722

Analytical Method: SW-846 8260 B-Modified Prep Method: SW5030B
Seq Number: 192712 Matrix: Water Date Prep: 03/29/22
MB Sample Id: 90159-1-BLK LCS Sample Id: 90159-1-BKS LCSD Sample Id: 90159-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	29.31	98	28.54	95	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	106		99		86		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031722

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22031722

Analytical Method: SW-846 8260 B-Modified
Seq Number: 192712 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 03/29/22 16:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.60	102	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 B-Modified
Seq Number: 192712 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 03/29/22 15:46

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.51	95	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 2203722 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kap-Flex | PROJECT #: 31405450.0/04

SITE LOCATION: Hanover-MD | P.O. #:

SAMPLER(S): Shannan Burke | DW CERT #:

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

Preservative Codes: 1 - HCL, 2 - H_2SO_4, 3 - HNO_3, 4 - NaOH, 5 - E624KIT, 6 - ICE, 7 - Sodium Thiosulfate, 8 - Ascorbic Acid, 9 - TerraCore Kit

② ③ ④

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	HCl	HCl	Analysis/ Method Required ③: 1,4-dioxane (SIM)	VOCs (624)
1	~~Effluent~~ VSP-4	3/17/22	1315	WW	3	G		X			
2	TB-031722	—	—	TB	4	—		X	X		

⑤

Relinquished By: (1)	Date	Time	Received By:
[signature]	3/17/22	1400	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres

Custody Seal: Pres Cooler Intact

Coolers: 1 Temp: 5.4-5.8C

Shipping Carrier: Client TB-5.2C

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22031722

Client Name WSP USA - Herndon
Disposal Date 04/21/2022

Received By Marissa Vertucci
Date Received 03/17/2022 02:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	5.8
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Eric Johnson
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	2
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 03/17/2022

PM Review and Approval: Amber Confer Date: 03/18/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041209

April 26, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22041209**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22041209**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on May 17, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22041209

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/12/2022 at 12:40 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22041209-001	Effluent VSP-4	WASTE WATER	04/12/22 10:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041209

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/12/2022 10:10** **PSS Sample ID: 22041209-001**
Matrix: WASTE WATER **Date/Time Received: 04/12/2022 12:40**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.8**	ug/L	1.0		1	04/13/22	04/13/22 21:19	1064
Lead	ND	ug/L	1.0		1	04/13/22	04/13/22 21:19	1064
Nickel	**21.8**	ug/L	1.00		1	04/13/22	04/13/22 21:19	1064
Zinc	**33.9**	ug/L	20.0		1	04/13/22	04/13/22 21:19	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.0**	ug/L	1.0		1	04/13/22	04/13/22 23:28	1064
Lead	ND	ug/L	1.0		1	04/13/22	04/13/22 23:28	1064
Nickel	**21.6**	ug/L	1.00		1	04/13/22	04/13/22 23:28	1064
Zinc	**32.0**	ug/L	20.0		1	04/13/22	04/13/22 23:28	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=5

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	04/13/22	04/13/22 12:59	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Acrylonitrile	ND	ug/L	5.0		1	04/13/22	04/13/22 12:59	1011
Chloromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Vinyl Chloride	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Bromomethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Chloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Methylene Chloride	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Chloroform	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Benzene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041209

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/12/2022 10:10** **PSS Sample ID: 22041209-001**
Matrix: WASTE WATER **Date/Time Received: 04/12/2022 12:40**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=5

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Bromodichloromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Toluene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Tetrachloroethylene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Chlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Ethylbenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
Bromoform	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 12:59	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*100*	*%*	*87-120*	*1*	*04/13/22*	*04/13/22 12:59*	*1011*
4-Bromofluorobenzene	*101*	*%*	*85-147*	*1*	*04/13/22*	*04/13/22 12:59*	*1011*
Toluene-D8	*101*	*%*	*88-110*	*1*	*04/13/22*	*04/13/22 12:59*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**22**	mg/L	0.66		1	04/13/22	04/13/22 21:19	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041209

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/12/2022 10:10** **PSS Sample ID: 22041209-001**
Matrix: WASTE WATER **Date/Time Received: 04/12/2022 12:40**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	04/14/22	04/14/22 20:10	1064

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 13-Apr-22 13:40

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		04/18/22	04/18/22 15:00	4005

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Project Name: Kop-Flex

PSS Project No.: 22041209

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22041209: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22041209

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22041209-001	W	90320	193080	04/13/2022 11:45	04/13/2022 21:19
	90320-1-BKS	BKS	90320-1-BKS	W	90320	193080	04/13/2022 11:45	04/13/2022 20:47
	90320-1-BLK	BLK	90320-1-BLK	W	90320	193080	04/13/2022 11:45	04/13/2022 20:42
	Water S	MS	22041205-001 S	W	90320	193080	04/13/2022 11:45	04/13/2022 21:10
	RW-11 S	MS	22041223-003 S	W	90320	193080	04/13/2022 11:45	04/13/2022 22:38
	Water SD	MSD	22041205-001 S	W	90320	193080	04/13/2022 11:45	04/13/2022 21:14
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22041209-001	W	90328	193082	04/13/2022 18:30	04/13/2022 23:28
	90328-1-BKS	BKS	90328-1-BKS	W	90328	193082	04/13/2022 18:30	04/13/2022 23:09
	90328-1-BLK	BLK	90328-1-BLK	W	90328	193082	04/13/2022 18:30	04/13/2022 23:05
	PRT-Discharge-041122 S	MS	22041115-001 S	W	90328	193082	04/13/2022 18:30	04/13/2022 23:19
	PRT-Discharge-041122 SD	MSD	22041115-001 S	W	90328	193082	04/13/2022 18:30	04/13/2022 23:23
EPA 624 .1	Effluent VSP-4	Initial	22041209-001	W	90330	193062	04/13/2022 08:53	04/13/2022 12:59
	90330-1-BKS	BKS	90330-1-BKS	W	90330	193062	04/13/2022 08:53	04/13/2022 09:24
	90330-1-BLK	BLK	90330-1-BLK	W	90330	193062	04/13/2022 08:53	04/13/2022 11:02
	PRT-Discharge-041122 S	MS	22041115-001 S	W	90330	193062	04/13/2022 08:53	04/13/2022 14:52
	PRT-Discharge-041122 SD	MSD	22041115-001 S	W	90330	193062	04/13/2022 08:53	04/13/2022 15:15
SM 2340B	Effluent VSP-4	Initial	22041209-001	W	90320	193085	04/13/2022 11:45	04/13/2022 21:19
SM 2540D -2015	Effluent VSP-4	Initial	22041209-001	W	193126	193126	04/14/2022 20:10	04/14/2022 20:10
	193126-1-BKS	BKS	193126-1-BKS	W	193126	193126	04/14/2022 20:10	04/14/2022 20:10
	193126-1-BLK	BLK	193126-1-BLK	W	193126	193126	04/14/2022 20:10	04/14/2022 20:10
	Plymouth Tank 4.8.22 D	MD	22040824-001 D	W	193126	193126	04/14/2022 20:10	04/14/2022 20:10
SM 5210B -2011	Effluent VSP-4	Initial	22041209-001	W	193323	193323	04/18/2022 15:00	04/18/2022 15:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041209

Analytical Method: SM 2540D -2015
Seq Number: 193126 Matrix: Water
MB Sample Id: 193126-1-BLK LCS Sample Id: 193126-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	99.50	97.30	98	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 193080 Matrix: Water Date Prep: 04/13/22
MB Sample Id: 90320-1-BLK LCS Sample Id: 90320-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	50.35	101	85-115	ug/L	
Lead	<1.000	50.00	46.91	94	85-115	ug/L	
Nickel	<1.000	50.00	47.87	96	85-115	ug/L	
Zinc	<20.00	100	96.49	96	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 193082 Matrix: Water Date Prep: 04/13/22
MB Sample Id: 90328-1-BLK LCS Sample Id: 90328-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	49.16	98	85-115	ug/L	
Lead	<1.000	50.00	46.06	92	85-115	ug/L	
Nickel	<1.000	50.00	47.84	96	85-115	ug/L	
Zinc	<20.00	100	95.32	95	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041209

Analytical Method: EPA 624 .1
Seq Number: 193062
MB Sample Id: 90330-1-BLK

Matrix: Water
LCS Sample Id: 90330-1-BKS

Prep Method: E624PREP
Date Prep: 04/13/22

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	52.18	104	60-140	ug/L	
Acrylonitrile	<5.000	50.00	44.11	88	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	50.06	100	54-148	ug/L	
Chloromethane	<1.000	50.00	62.24	124	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	60.64	121	5-195	ug/L	
Bromomethane	<1.000	50.00	43.83	88	15-185	ug/L	
Chloroethane	<1.000	50.00	48.43	97	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.94	98	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	33.03	66	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.16	98	50-150	ug/L	
Methylene Chloride	<1.000	50.00	49.23	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	47.06	94	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.22	94	70-130	ug/L	
Chloroform	<1.000	50.00	45.04	90	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.35	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	48.63	97	70-130	ug/L	
Benzene	<1.000	50.00	46.72	93	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	43.63	87	70-130	ug/L	
Trichloroethene	<1.000	50.00	46.40	93	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.73	93	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	46.19	92	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	50.41	101	25-175	ug/L	
Toluene	<1.000	50.00	47.83	96	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.93	92	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.02	90	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.06	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	46.92	94	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.92	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.78	102	60-140	ug/L	
Bromoform	<1.000	50.00	43.03	86	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.33	87	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.79	102	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.94	100	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.04	100	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		98		87-120	%
4-Bromofluorobenzene	103		98		85-147	%
Toluene-D8	99		99		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041209

Analytical Method: EPA 200.8
Seq Number: 193080 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 04/13/22 19:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	49.80	100	85-115	ug/L	
Lead	50.00	46.50	93	85-115	ug/L	
Nickel	50.00	46.83	94	85-115	ug/L	
Zinc	100	95.64	96	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 193080 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 04/13/22 20:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.95	98	85-115	ug/L	
Lead	50.00	46.25	93	85-115	ug/L	
Nickel	50.00	46.71	93	85-115	ug/L	
Zinc	100	95.63	96	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 193080 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 04/13/22 21:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	49.19	98	85-115	ug/L	
Lead	50.00	46.40	93	85-115	ug/L	
Nickel	50.00	47.41	95	85-115	ug/L	
Zinc	100	94.72	95	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 193080 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 04/13/22 22:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.93	98	85-115	ug/L	
Lead	50.00	46.29	93	85-115	ug/L	
Nickel	50.00	48.51	97	85-115	ug/L	
Zinc	100	95.49	95	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 193080 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 04/13/22 15:01

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.54	101	90-110	ug/L	
Lead	50.00	46.70	93	90-110	ug/L	
Nickel	50.00	47.17	94	90-110	ug/L	
Zinc	100	94.25	94	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 193082 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 04/13/22 22:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.93	98	85-115	ug/L	
Lead	50.00	46.29	93	85-115	ug/L	
Nickel	50.00	48.51	97	85-115	ug/L	
Zinc	100	95.49	95	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 193082 Matrix: Water
CCV Sample Id: CCV 7 Analyzed Date: 04/13/22 23:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	50.00	48.51	97	85-115	ug/L	
Lead	50.00	46.26	93	85-115	ug/L	
Nickel	50.00	47.78	96	85-115	ug/L	
Zinc	100	94.98	95	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 193082 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 04/13/22 15:01

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.54	101	90-110	ug/L	
Lead	50.00	46.70	93	90-110	ug/L	
Nickel	50.00	47.17	94	90-110	ug/L	
Zinc	100	94.25	94	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041209

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22041209 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes											
							Analysis/ Method Required ③	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8) D1556	TSS	BOD						
								1,6	3	3	6	6						
1	Effluent VSP-4	4/12/22	1010	WW	7	G		X	X	X	X	X						

⑤ ④

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	4/12/22	1240	
(2)			
(3)			
(4)			

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Yes

Custody Seal: Yes / Cooler Intact

Coolers: 1 Temp: 1.9-2.7°C

Shipping Carrier: FTE TB-1.9°C

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22041209

Client Name WSP USA - Herndon
Disposal Date 05/17/2022

Received By Marissa Vertucci
Date Received 04/12/2022 12:40:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	2.7
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 04/12/2022

PM Review and Approval: Amber Confer Date: 04/12/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041213

April 26, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22041213**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22041213**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on May 17, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22041213

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/12/2022 at 12:40 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22041213-001	Effluent VSP-4	WASTE WATER	04/12/22 10:10
22041213-002	TB-041222	WATER	04/12/22 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041213

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/12/2022 10:10** **PSS Sample ID: 22041213-001**
Matrix: WASTE WATER **Date/Time Received: 04/12/2022 12:40**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/25/22	04/25/22 10:26	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*04/25/22*	*04/25/22 10:26*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041213

Sample ID: TB-041222 **Date/Time Sampled: 04/12/2022 00:00** **PSS Sample ID: 22041213-002**
Matrix: WATER **Date/Time Received: 04/12/2022 12:40**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	04/13/22	04/13/22 13:21	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Acrylonitrile	ND	ug/L	5.0		1	04/13/22	04/13/22 13:21	1011
Chloromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Vinyl Chloride	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Bromomethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Chloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Methylene Chloride	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Chloroform	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Benzene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Trichloroethene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Bromodichloromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Toluene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Tetrachloroethylene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Chlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Ethylbenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
Bromoform	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/13/22	04/13/22 13:21	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22041213

Sample ID: TB-041222 **Date/Time Sampled: 04/12/2022 00:00** **PSS Sample ID: 22041213-002**
Matrix: WATER **Date/Time Received: 04/12/2022 12:40**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*100*	*%*	*87-120*	*1*	*04/13/22*	*04/13/22 13:21*	*1011*
4-Bromofluorobenzene	*102*	*%*	*85-147*	*1*	*04/13/22*	*04/13/22 13:21*	*1011*
Toluene-D8	*102*	*%*	*88-110*	*1*	*04/13/22*	*04/13/22 13:21*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/25/22	04/25/22 10:48	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*100*	*%*	*80-120*	*1*	*04/25/22*	*04/25/22 10:48*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22041213

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22041213

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-041222	Initial	22041213-002	W	90330	193062	04/13/2022 08:53	04/13/2022 13:21
	90330-1-BKS	BKS	90330-1-BKS	W	90330	193062	04/13/2022 08:53	04/13/2022 09:24
	90330-1-BLK	BLK	90330-1-BLK	W	90330	193062	04/13/2022 08:53	04/13/2022 11:02
	PRT-Discharge-041122 S	MS	22041115-001 S	W	90330	193062	04/13/2022 08:53	04/13/2022 14:52
	PRT-Discharge-041122 SD	MSD	22041115-001 S	W	90330	193062	04/13/2022 08:53	04/13/2022 15:15
SW-846 8260 D-SIM	Effluent VSP-4	Initial	22041213-001	W	90452	193332	04/25/2022 07:40	04/25/2022 10:26
	TB-041222	Initial	22041213-002	W	90452	193332	04/25/2022 07:40	04/25/2022 10:48
	90452-1-BKS	BKS	90452-1-BKS	W	90452	193332	04/25/2022 07:40	04/25/2022 08:57
	90452-1-BLK	BLK	90452-1-BLK	W	90452	193332	04/25/2022 07:40	04/25/2022 10:04
	90452-1-BSD	BSD	90452-1-BSD	W	90452	193332	04/25/2022 07:40	04/25/2022 09:19

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041213

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 193062
Matrix: Water
Date Prep: 04/13/22
MB Sample Id: 90330-1-BLK
LCS Sample Id: 90330-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	52.18	104	60-140	ug/L	
Acrylonitrile	<5.000	50.00	44.11	88	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	50.06	100	54-148	ug/L	
Chloromethane	<1.000	50.00	62.24	124	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	60.64	121	5-195	ug/L	
Bromomethane	<1.000	50.00	43.83	88	15-185	ug/L	
Chloroethane	<1.000	50.00	48.43	97	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.94	98	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	33.03	66	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.16	98	50-150	ug/L	
Methylene Chloride	<1.000	50.00	49.23	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	47.06	94	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.22	94	70-130	ug/L	
Chloroform	<1.000	50.00	45.04	90	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.35	97	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	48.63	97	70-130	ug/L	
Benzene	<1.000	50.00	46.72	93	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	43.63	87	70-130	ug/L	
Trichloroethene	<1.000	50.00	46.40	93	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.73	93	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	46.19	92	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	50.41	101	25-175	ug/L	
Toluene	<1.000	50.00	47.83	96	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.93	92	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.02	90	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.06	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	46.92	94	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.92	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.78	102	60-140	ug/L	
Bromoform	<1.000	50.00	43.03	86	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.33	87	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.79	102	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.94	100	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.04	100	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		98		87-120	%
4-Bromofluorobenzene	103		98		85-147	%
Toluene-D8	99		99		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041213

Analytical Method: SW-846 8260 D-SIM Prep Method: SW5030B
Seq Number: 193332 Matrix: Water Date Prep: 04/25/22
MB Sample Id: 90452-1-BLK LCS Sample Id: 90452-1-BKS LCSD Sample Id: 90452-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	28.32	94	29.93	100	50-150	6	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	100		98		97		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22041213

Analytical Method: EPA 624 .1

Seq Number: 190498 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/04/22 18:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05212	104	60-139	mg/L	
Acrylonitrile	0.05000	0.05218	104	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04876	98	54-148	mg/L	
Chloromethane	0.05000	0.05087	102	57-135	mg/L	
Vinyl Chloride	0.05000	0.04935	99	64-129	mg/L	
Bromomethane	0.05000	0.04417	88	67-132	mg/L	
Chloroethane	0.05000	0.04689	94	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05037	101	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05250	105	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05110	102	67-126	mg/L	
Methylene Chloride	0.05000	0.04972	99	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05236	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05114	102	76-127	mg/L	
Chloroform	0.05000	0.05067	101	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05202	104	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05172	103	73-130	mg/L	
Benzene	0.05000	0.05121	102	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05117	102	77-129	mg/L	
Trichloroethene	0.05000	0.05160	103	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05134	103	74-129	mg/L	
Bromodichloromethane	0.05000	0.05263	105	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05459	109	76-116	mg/L	
Toluene	0.05000	0.05110	102	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.04986	100	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05210	104	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05070	101	78-128	mg/L	
Dibromochloromethane	0.05000	0.05375	108	70-132	mg/L	
Chlorobenzene	0.05000	0.05101	102	72-128	mg/L	
Ethylbenzene	0.05000	0.05260	105	69-131	mg/L	
Bromoform	0.05000	0.05062	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05387	108	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05255	105	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05193	104	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05296	106	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	101	85-147	%	
Toluene-D8	100	88-110	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 191729 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 02/22/22 12:23

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.22	104	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 193332 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 04/25/22 08:30

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	25.74	86	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 191729 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 02/22/22 12:01

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.37	105	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	101	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① Client / Project Information

PSS CLIENT: WSP USA	OFFICE LOCATION: Herndon, VA
BILL TO (if different):	PHONE #: 703-709-6500
CONTACT: Eric Johnson	EMAIL: eric.johnson@wsp.com
PROJECT NAME: Kap-Flex	PROJECT #: 31401545.010/04
SITE LOCATION: Hanover, MD	P.O. #:
SAMPLER(S): Shannon Burke	DW CERT #:

PSS Work Order #: 2204213

PAGE 1 OF 1

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② Sample Information

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	Analysis/ Method Required ③: 1,4-dioxane (8260 SIM)	VOCs (624)	Comments
							1	1		
1	Effluent VSP-4	4/12/22	1010	WW	3	G	X			
2	TB-041222	—	—	TB	4	—	X	X		Trip blank

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤ Relinquished / Received

	Date	Time	Received By:
Relinquished By: (1) Shannon Burke	4/12/22	1240	
Relinquished By: (2)			
Relinquished By: (3)			
Relinquished By: (4)			

④ Requested TAT (One TAT per COC)

☐ ~~5-Day~~ ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres

Custody Seal: Pres | Cooler Intact | TB-1.9°C

Coolers: 1 Temp: 1.9-2.6°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22041213

Client Name WSP USA - Herndon
Disposal Date 05/17/2022

Received By Marissa Vertucci
Date Received 04/12/2022 12:40:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	2.6
		Temp Blank Present	No

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	2
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 04/12/2022

PM Review and Approval: Amber Confer Date: 04/12/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062918

July 14, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22062918**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22062918**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on August 3, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22062918

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/29/2022 at 11:55 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22062918-001	Effluent VSP-4	WASTE WATER	06/29/22 08:45

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062918

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2022 08:45** **PSS Sample ID: 22062918-001**
Matrix: WASTE WATER **Date/Time Received: 06/29/2022 11:55**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**5.0**	ug/L	1.0		1	06/30/22	06/30/22 19:16	1064
Lead	ND	ug/L	1.0		1	06/30/22	06/30/22 19:16	1064
Nickel	**15.2**	ug/L	1.00		1	06/30/22	06/30/22 19:16	1064
Zinc	**47.0**	ug/L	20.0		1	06/30/22	06/30/22 19:16	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.0**	ug/L	1.0		1	07/05/22	07/05/22 17:51	1064
Lead	ND	ug/L	1.0		1	07/05/22	07/05/22 17:51	1064
Nickel	**13.1**	ug/L	1.00		1	07/05/22	07/05/22 17:51	1064
Zinc	**36.7**	ug/L	20.0		1	07/05/22	07/07/22 12:45	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	06/30/22	06/30/22 12:30	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Acrylonitrile	ND	ug/L	5.0		1	06/30/22	06/30/22 12:30	1011
Chloromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Bromomethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Chloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Methylene Chloride	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Chloroform	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Benzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062918

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2022 08:45** **PSS Sample ID: 22062918-001**
Matrix: WASTE WATER **Date/Time Received: 06/29/2022 11:55**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Toluene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Chlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Ethylbenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
Bromoform	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:30	1011

Surrogate(s)	***Recovery***		***Limits***				
Dibromofluoromethane	*98*	*%*	*87-120*		*1*	*06/30/22*	*06/30/22 12:30*	*1011*
4-Bromofluorobenzene	*103*	*%*	*85-147*		*1*	*06/30/22*	*06/30/22 12:30*	*1011*
Toluene-D8	*101*	*%*	*88-110*		*1*	*06/30/22*	*06/30/22 12:30*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**22**	mg/L	13		20	06/30/22	07/13/22 17:15	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062918

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2022 08:45** **PSS Sample ID: 22062918-001**
Matrix: WASTE WATER **Date/Time Received: 06/29/2022 11:55**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	07/05/22	07/05/22 16:50	1064

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 29-Jun-22 16:20

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		07/04/22	07/04/22 11:30	4005

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Project Name: Kop-Flex

PSS Project No.: 22062918

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22062918: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22062918

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22062918-001	W	91336	195180	06/30/2022 10:55	06/30/2022 19:16
	91336-1-BKS	BKS	91336-1-BKS	W	91336	195180	06/30/2022 10:55	06/30/2022 18:58
	91336-1-BLK	BLK	91336-1-BLK	W	91336	195180	06/30/2022 10:55	06/30/2022 18:53
	001 S	MS	22062803-001 S	W	91336	195180	06/30/2022 10:55	06/30/2022 19:07
	001 SD	MSD	22062803-001 S	W	91336	195180	06/30/2022 10:55	06/30/2022 19:12
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22062918-001	W	91376	195259	07/05/2022 14:15	07/05/2022 17:51
	91376-1-BKS	BKS	91376-1-BKS	W	91376	195259	07/05/2022 14:15	07/05/2022 17:47
	91376-1-BLK	BLK	91376-1-BLK	W	91376	195259	07/05/2022 14:15	07/05/2022 17:42
	Effluent VSP-4 S	MS	22062918-001 S	W	91376	195259	07/05/2022 14:15	07/05/2022 17:56
	Effluent VSP-4 SD	MSD	22062918-001 S	W	91376	195259	07/05/2022 14:15	07/05/2022 18:01
	91376-1-BKS	Reanalysis	91376-1-BKS	W	91376	195318	07/05/2022 14:15	07/07/2022 12:49
	91376-1-BLK	Reanalysis	91376-1-BLK	W	91376	195318	07/05/2022 14:15	07/07/2022 12:38
	Effluent VSP-4	Reanalysis	22062918-001	W	91376	195318	07/05/2022 14:15	07/07/2022 12:45
EPA 624 .1	Effluent VSP-4	Initial	22062918-001	W	91344	195170	06/30/2022 08:34	06/30/2022 12:30
	91344-1-BKS	BKS	91344-1-BKS	W	91344	195170	06/30/2022 08:34	06/30/2022 08:57
	91344-1-BLK	BLK	91344-1-BLK	W	91344	195170	06/30/2022 08:34	06/30/2022 10:36
	Effluent VSP-4 S	MS	22062918-001 S	W	91344	195170	06/30/2022 08:34	06/30/2022 13:38
	Effluent VSP-4 SD	MSD	22062918-001 S	W	91344	195170	06/30/2022 08:34	06/30/2022 14:01
SM 2340B	Effluent VSP-4	Initial	22062918-001	W	91336	195527	06/30/2022 10:55	07/13/2022 17:15
SM 2540D -2015	Effluent VSP-4	Initial	22062918-001	W	195255	195255	07/05/2022 16:50	07/05/2022 16:50
	195255-1-BKS	BKS	195255-1-BKS	W	195255	195255	07/05/2022 16:50	07/05/2022 16:50
	195255-1-BLK	BLK	195255-1-BLK	W	195255	195255	07/05/2022 16:50	07/05/2022 16:50
	Outfall - 001 D	MD	22062911-001 D	W	195255	195255	07/05/2022 16:50	07/05/2022 16:50
SM 5210B -2011	Effluent VSP-4	Initial	22062918-001	W	195503	195503	07/04/2022 11:30	07/04/2022 11:30

Analytical Method: SM 2540D -2015
Seq Number: 195255 Matrix: Water
MB Sample Id: 195255-1-BLK LCS Sample Id: 195255-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	100.3	97.80	98	80-120	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 195180 Matrix: Water Date Prep: 06/30/22
MB Sample Id: 91336-1-BLK LCS Sample Id: 91336-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	46.35	93	85-115	ug/L	
Lead	<1.000	50.00	56.98	114	85-115	ug/L	
Nickel	<1.000	50.00	51.30	103	85-115	ug/L	
Zinc	<20.00	100	103.5	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 195259 Matrix: Water Date Prep: 07/05/22
MB Sample Id: 91376-1-BLK LCS Sample Id: 91376-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	49.79	100	85-115	ug/L	
Lead	<1.000	50.00	52.42	105	85-115	ug/L	
Nickel	<1.000	50.00	52.61	105	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 195318 Matrix: Water Date Prep: 07/05/22
MB Sample Id: 91376-1-BLK LCS Sample Id: 91376-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Zinc	<20.00	100	89.25	89	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 195259 Matrix: Waste Water Date Prep: 07/05/22
Parent Sample Id: 22062918-001 MS Sample Id: 22062918-001 S MSD Sample Id: 22062918-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	3.046	50.00	48.99	92	47.32	89	70-130	3	25	ug/L	
Lead	<1.000	50.00	49.58	99	44.78	90	70-130	10	25	ug/L	
Nickel	13.14	50.00	60.24	94	58.45	91	70-130	3	25	ug/L	
Zinc	36.67	100	133.5	97	128.6	92	70-130	4	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062918

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 195170
Matrix: Water
Date Prep: 06/30/22
MB Sample Id: 91344-1-BLK
LCS Sample Id: 91344-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	37.74	75	60-140	ug/L	
Acrylonitrile	<5.000	50.00	44.23	88	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.15	102	54-148	ug/L	
Chloromethane	<1.000	50.00	37.60	75	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	43.43	87	5-195	ug/L	
Bromomethane	<1.000	50.00	39.05	78	15-185	ug/L	
Chloroethane	<1.000	50.00	41.28	83	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.96	90	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	39.39	79	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.74	89	50-150	ug/L	
Methylene Chloride	<1.000	50.00	45.59	91	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.49	93	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	42.07	84	70-130	ug/L	
Chloroform	<1.000	50.00	42.42	85	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	44.76	90	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.85	96	70-130	ug/L	
Benzene	<1.000	50.00	44.60	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	41.27	83	70-130	ug/L	
Trichloroethene	<1.000	50.00	46.65	93	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	42.98	86	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	46.02	92	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.86	96	25-175	ug/L	
Toluene	<1.000	50.00	46.79	94	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.85	96	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	46.37	93	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	49.06	98	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	55.82	112	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.14	94	65-135	ug/L	
Ethylbenzene	<1.000	50.00	46.35	93	60-140	ug/L	
Bromoform	<1.000	50.00	52.65	105	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	42.04	84	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.37	93	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.44	91	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	46.26	93	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	99		99		87-120	%
4-Bromofluorobenzene	101		92		85-147	%
Toluene-D8	101		101		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062918

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 195170 Matrix: Waste Water Date Prep: 06/30/22
Parent Sample Id: 22062918-001 MS Sample Id: 22062918-001 S MSD Sample Id: 22062918-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	35.39	71	36.48	73	40-160	3	60	ug/L	
Acrylonitrile	<5.000	50.00	45.13	90	45.55	91	40-160	1	60	ug/L	
Dichlorodifluoromethane	<1.000	50.00	50.71	101	49.75	100	43-150	2	27	ug/L	
Chloromethane	<1.000	50.00	36.74	73	35.68	71	1-273	3	60	ug/L	
Vinyl Chloride	<1.000	50.00	40.45	81	45.19	90	1-251	11	66	ug/L	
Bromomethane	<1.000	50.00	37.58	75	38.66	77	1-242	3	61	ug/L	
Chloroethane	<1.000	50.00	40.01	80	39.03	78	14-230	2	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	43.27	87	42.25	85	17-181	2	84	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	30.27	61	28.81	58	1-305	5	71	ug/L	
1,1-Dichloroethene	<1.000	50.00	42.74	85	42.08	84	1-234	2	32	ug/L	
Methylene Chloride	<1.000	50.00	44.00	88	43.92	88	1-221	0	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	44.40	89	44.03	88	54-156	1	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	40.38	81	39.82	80	59-155	1	40	ug/L	
Chloroform	<1.000	50.00	40.92	82	40.48	81	51-138	1	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	42.55	85	42.81	86	52-162	1	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	45.82	92	45.51	91	70-140	1	41	ug/L	
Benzene	<1.000	50.00	43.14	86	42.47	85	37-151	2	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	39.62	79	39.62	79	49-155	0	49	ug/L	
Trichloroethene	<1.000	50.00	48.82	98	51.66	103	70-157	6	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	41.23	82	41.10	82	1-210	0	55	ug/L	
Bromodichloromethane	<1.000	50.00	43.32	87	43.74	87	35-155	1	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.42	89	45.46	91	1-227	2	58	ug/L	
Toluene	<1.000	50.00	45.18	90	44.76	90	47-150	1	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	43.94	88	45.23	90	17-183	3	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	43.87	88	44.71	89	52-150	2	45	ug/L	
Tetrachloroethylene	<1.000	50.00	47.25	95	46.60	93	64-148	1	39	ug/L	
Dibromochloromethane	<1.000	50.00	52.85	106	54.25	109	53-149	3	50	ug/L	
Chlorobenzene	<1.000	50.00	46.69	93	46.05	92	37-160	1	53	ug/L	
Ethylbenzene	<1.000	50.00	46.40	93	45.46	91	37-162	2	63	ug/L	
Bromoform	<1.000	50.00	49.40	99	49.59	99	45-169	0	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	39.41	79	35.95	72	46-157	9	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	47.57	95	46.71	93	59-156	2	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.47	93	45.90	92	18-190	1	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.36	95	46.58	93	18-190	2	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	100		100		87-120	%
4-Bromofluorobenzene	95		97		85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 195180 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 06/30/22 19:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	91.08	91	85-115	ug/L	
Lead	100	98.39	98	85-115	ug/L	
Nickel	100	101.4	101	85-115	ug/L	
Zinc	200	205.1	103	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 195180 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 06/30/22 18:21

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	100	92.39	92	90-110	ug/L	
Lead	100	97.50	98	90-110	ug/L	
Nickel	100	102.9	103	90-110	ug/L	
Zinc	200	209.3	105	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 195259 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 07/05/22 18:34

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	98.04	98	85-115	ug/L	
Lead	100	102.7	103	85-115	ug/L	
Nickel	100	103.4	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 195259 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 07/05/22 19:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	99.29	99	85-115	ug/L	
Lead	100	100.3	100	85-115	ug/L	
Nickel	100	104.5	105	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 195318 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 07/07/22 13:20

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Zinc	200	211.1	106	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 195259 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 07/05/22 17:18

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	45.27	91	90-110	ug/L	
Lead	50.00	45.66	91	90-110	ug/L	
Nickel	50.00	47.21	94	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 195318 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 07/07/22 12:09

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Zinc	100	93.70	94	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062918

Analytical Method: EPA 624 .1

Seq Number: 193723 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/22 13:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.04831	97	60-139	mg/L	
Acrylonitrile	0.05000	0.04814	96	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04816	96	54-148	mg/L	
Chloromethane	0.05000	0.04439	89	57-135	mg/L	
Vinyl Chloride	0.05000	0.04162	83	64-129	mg/L	
Bromomethane	0.05000	0.04558	91	67-132	mg/L	
Chloroethane	0.05000	0.04480	90	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.04649	93	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05205	104	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.04727	95	67-126	mg/L	
Methylene Chloride	0.05000	0.04623	92	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04779	96	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.04746	95	76-127	mg/L	
Chloroform	0.05000	0.04623	92	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.04882	98	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.04920	98	73-130	mg/L	
Benzene	0.05000	0.04704	94	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.04632	93	77-129	mg/L	
Trichloroethene	0.05000	0.04757	95	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.04775	96	74-129	mg/L	
Bromodichloromethane	0.05000	0.04930	99	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05202	104	76-116	mg/L	
Toluene	0.05000	0.04682	94	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05382	108	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.04718	94	78-127	mg/L	
Tetrachloroethylene	0.05000	0.04802	96	78-128	mg/L	
Dibromochloromethane	0.05000	0.05109	102	70-132	mg/L	
Chlorobenzene	0.05000	0.04766	95	72-128	mg/L	
Ethylbenzene	0.05000	0.04893	98	69-131	mg/L	
Bromoform	0.05000	0.05274	105	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.04749	95	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.04845	97	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04826	97	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.04815	96	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	99	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: ericjohnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010104

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 22062918 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water, DW=Drinking Water, GW=Ground Water, WW=Waste Water, O=Oil, S=Soil, SOL=Solid, A=Air, WI=Wipe

② Preservatives Use Codes: 1,6 | 3 | 3 | 6 | 6

Analysis/Method Required ③: VOCs (624) | Total metals + hardness (200.8) | Dissolved metals (200.8) | TSS | BOD

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD	Preservative Codes
1	Effluent VSP-4	6/29/22	0845	WW	7	G	X	X	X	X	X	Dissolved metals field-filtered. Metals = Cu, Pb, Ni, Zn

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	6/29/22	1155	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres

Custody Seal: Pres / Cooler TB-2.1C

Coolers: 1 | Temp: 2.4-4.6°C

Shipping Carrier: Client

Special Instructions: Standard 10-day TAT

At sample collection: pH = 7.36 SU

DO = 5.88 mg/L

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22062918

Client Name WSP USA - Herndon
Disposal Date 08/03/2022

Received By Marissa Vertucci
Date Received 06/29/2022 11:55:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	4.6
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Shannon Burke
Chain of Custody	Yes	MD DW Cert. No.	N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	1
		Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 06/29/2022

PM Review and Approval: Amber Confer Date: 06/29/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062919

July 14, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22062919**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22062919**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on August 3, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22062919

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/29/2022 at 11:55 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22062919-001	Influent VSP-1	GROUND WATER	06/26/22 13:00
22062919-002	Effluent VSP-4	WASTE WATER	06/29/22 08:45
22062919-003	TB-062622	WATER	06/29/22 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062919

Sample ID: Influent VSP-1 **Date/Time Sampled: 06/26/2022 13:00** **PSS Sample ID: 22062919-001**
Matrix: GROUND WATER **Date/Time Received: 06/29/2022 11:55**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 195213 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	07/01/22	07/01/22 12:03	1011
Benzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Bromochloromethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Bromoform	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Bromomethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	07/01/22	07/01/22 12:03	1011
Carbon Disulfide	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Chlorobenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Chloroethane	**2.8**	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Chloroform	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Chloromethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Cyclohexane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,1-Dichloroethane	**34**	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2-Dichloroethane	**1.0**	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,1-Dichloroethene	**140**	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Ethylbenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/01/22	07/01/22 12:03	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Methyl Acetate	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Methylcyclohexane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Methylene chloride	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062919

Sample ID: Influent VSP-1 **Date/Time Sampled: 06/26/2022 13:00** **PSS Sample ID: 22062919-001**
Matrix: GROUND WATER **Date/Time Received: 06/29/2022 11:55**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 195213 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/01/22	07/01/22 12:03	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Naphthalene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Styrene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Toluene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,1,1-Trichloroethane	**15**	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Trichloroethene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
Vinyl chloride	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011
m&p-Xylene	ND	ug/L	2.0		1	07/01/22	07/01/22 12:03	1011
o-Xylene	ND	ug/L	1.0		1	07/01/22	07/01/22 12:03	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*100*	*%*	*88-120*		*1*	*07/01/22*	*07/01/22 12:03*	*1011*
Dibromofluoromethane	*101*	*%*	*92-107*		*1*	*07/01/22*	*07/01/22 12:03*	*1011*
Toluene-D8	*101*	*%*	*95-106*		*1*	*07/01/22*	*07/01/22 12:03*	*1011*

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**86**	ug/L	10		10	07/02/22	07/02/22 14:09	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*99*	*%*	*80-120*		*10*	*07/02/22*	*07/02/22 14:09*	*1011*

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Project Name: Kop-Flex
PSS Project No.: 22062919

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2022 08:45** **PSS Sample ID: 22062919-002**
Matrix: WASTE WATER **Date/Time Received: 06/29/2022 11:55**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**1.0**	ug/L	1.0		1	07/02/22	07/02/22 13:24	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*99*	*%*	*80-120*		*1*	*07/02/22*	*07/02/22 13:24*	*1011*

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Project Name: Kop-Flex
PSS Project No.: 22062919

Sample ID: TB-062622 **Date/Time Sampled: 06/29/2022 00:00** **PSS Sample ID: 22062919-003**
Matrix: WATER **Date/Time Received: 06/29/2022 11:55**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	06/30/22	06/30/22 12:53	1011
Acrylonitrile	ND	ug/L	5.0		1	06/30/22	06/30/22 12:53	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Chloromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Bromomethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Chloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Methylene Chloride	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Chloroform	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Benzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Trichloroethene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Toluene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Chlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Ethylbenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
Bromoform	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/30/22	06/30/22 12:53	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22062919

Sample ID: TB-062622 **Date/Time Sampled: 06/29/2022 00:00** **PSS Sample ID: 22062919-003**
Matrix: WATER **Date/Time Received: 06/29/2022 11:55**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*100*	*%*	*87-120*	*1*	*06/30/22*	*06/30/22 12:53*	*1011*
4-Bromofluorobenzene	*100*	*%*	*85-147*	*1*	*06/30/22*	*06/30/22 12:53*	*1011*
Toluene-D8	*101*	*%*	*88-110*	*1*	*06/30/22*	*06/30/22 12:53*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	07/02/22	07/02/22 13:47	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*100*	*%*	*80-120*	*1*	*07/02/22*	*07/02/22 13:47*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22062919

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

TCL Volatile Organic Compounds

Batch: 195213

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Matrix spike/matrix spike duplicate (MS/MSD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22062919

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-062622	Initial	22062919-003	W	91344	195170	06/30/2022 08:34	06/30/2022 12:53
	91344-1-BKS	BKS	91344-1-BKS	W	91344	195170	06/30/2022 08:34	06/30/2022 08:57
	91344-1-BLK	BLK	91344-1-BLK	W	91344	195170	06/30/2022 08:34	06/30/2022 10:36
	Effluent VSP-4 S	MS	22062918-001 S	W	91344	195170	06/30/2022 08:34	06/30/2022 13:38
	Effluent VSP-4 SD	MSD	22062918-001 S	W	91344	195170	06/30/2022 08:34	06/30/2022 14:01
SW-846 8260 D	Influent VSP-1	Initial	22062919-001	W	91364	195213	07/01/2022 08:00	07/01/2022 12:03
	91364-1-BKS	BKS	91364-1-BKS	W	91364	195213	07/01/2022 08:00	07/01/2022 08:00
	91364-1-BLK	BLK	91364-1-BLK	W	91364	195213	07/01/2022 08:00	07/01/2022 09:40
	Influent VSP-1 S	MS	22062919-001 S	W	91364	195213	07/01/2022 08:00	07/01/2022 13:56
	Influent VSP-1 SD	MSD	22062919-001 S	W	91364	195213	07/01/2022 08:00	07/01/2022 14:19
SW-846 8260 D-SIM	Influent VSP-1	Initial	22062919-001	W	91370	195232	07/02/2022 08:02	07/02/2022 14:09
	Effluent VSP-4	Initial	22062919-002	W	91370	195232	07/02/2022 08:02	07/02/2022 13:24
	TB-062622	Initial	22062919-003	W	91370	195232	07/02/2022 08:02	07/02/2022 13:47
	91370-1-BKS	BKS	91370-1-BKS	W	91370	195232	07/02/2022 08:02	07/02/2022 11:56
	91370-1-BLK	BLK	91370-1-BLK	W	91370	195232	07/02/2022 08:02	07/02/2022 13:02
	91370-1-BSD	BSD	91370-1-BSD	W	91370	195232	07/02/2022 08:02	07/02/2022 12:18

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: EPA 624 .1
Seq Number: 195170
MB Sample Id: 91344-1-BLK

Matrix: Water
LCS Sample Id: 91344-1-BKS

Prep Method: E624PREP
Date Prep: 06/30/22

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<5.000	50.00	37.74	75	60-140	ug/L	
Acrylonitrile	<5.000	50.00	44.23	88	60-140	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.15	102	54-148	ug/L	
Chloromethane	<1.000	50.00	37.60	75	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	43.43	87	5-195	ug/L	
Bromomethane	<1.000	50.00	39.05	78	15-185	ug/L	
Chloroethane	<1.000	50.00	41.28	83	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.96	90	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	39.39	79	1-225	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.74	89	50-150	ug/L	
Methylene Chloride	<1.000	50.00	45.59	91	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	46.49	93	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	42.07	84	70-130	ug/L	
Chloroform	<1.000	50.00	42.42	85	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	44.76	90	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.85	96	70-130	ug/L	
Benzene	<1.000	50.00	44.60	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	41.27	83	70-130	ug/L	
Trichloroethene	<1.000	50.00	46.65	93	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	42.98	86	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	46.02	92	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.86	96	25-175	ug/L	
Toluene	<1.000	50.00	46.79	94	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.85	96	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	46.37	93	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	49.06	98	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	55.82	112	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.14	94	65-135	ug/L	
Ethylbenzene	<1.000	50.00	46.35	93	60-140	ug/L	
Bromoform	<1.000	50.00	52.65	105	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	42.04	84	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.37	93	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.44	91	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	46.26	93	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	99		99		87-120	%
4-Bromofluorobenzene	101		92		85-147	%
Toluene-D8	101		101		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 195213
Matrix: Water
Date Prep: 07/01/22
MB Sample Id: 91364-1-BLK
LCS Sample Id: 91364-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	42.53	85	49-154	ug/L	
Benzene	<1.000	50.00	43.96	88	76-112	ug/L	
Bromochloromethane	<1.000	50.00	49.01	98	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	45.43	91	78-117	ug/L	
Bromoform	<1.000	50.00	50.87	102	69-123	ug/L	
Bromomethane	<1.000	50.00	38.92	78	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	42.80	86	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	46.01	92	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	47.57	95	77-119	ug/L	
Chlorobenzene	<1.000	50.00	47.23	94	76-114	ug/L	
Chloroethane	<1.000	50.00	41.07	82	61-113	ug/L	
Chloroform	<1.000	50.00	42.07	84	75-113	ug/L	
Chloromethane	<1.000	50.00	37.31	75	41-148	ug/L	
Cyclohexane	<1.000	50.00	43.56	87	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	42.96	86	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	55.92	112	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	46.23	92	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	48.19	96	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.70	97	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.22	102	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	47.92	96	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	41.47	83	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	40.89	82	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	45.32	91	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.28	89	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	42.73	85	76-115	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.52	95	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	47.23	94	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	45.92	92	73-121	ug/L	
Ethylbenzene	<1.000	50.00	46.77	94	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	41.66	83	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	47.15	94	76-126	ug/L	
Methyl Acetate	<1.000	50.00	51.71	103	61-117	ug/L	
Methylcyclohexane	<1.000	50.00	47.43	95	82-126	ug/L	
Methylene chloride	<1.000	50.00	44.66	89	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	39.43	79	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	44.40	89	71-114	ug/L	
Naphthalene	<1.000	50.00	42.85	86	60-122	ug/L	
Styrene	<1.000	50.00	46.12	92	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.26	87	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	49.29	99	76-123	ug/L	
Toluene	<1.000	50.00	46.33	93	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	46.13	92	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	45.68	91	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	43.99	88	79-118	ug/L	
Trichloroethene	<1.000	50.00	46.87	94	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.48	91	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.70	89	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	44.43	89	77-123	ug/L	
Vinyl chloride	<1.000	50.00	47.60	95	53-151	ug/L	
m&p-Xylene	<2.000	100	92.33	92	79-121	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 195213
Matrix: Water
Date Prep: 07/01/22
MB Sample Id: 91364-1-BLK
LCS Sample Id: 91364-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	44.45	89	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	98		96		88-120	%
Dibromofluoromethane	99		100		92-107	%
Toluene-D8	100		100		95-106	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 195213 Matrix: Ground Water Date Prep: 07/01/22
Parent Sample Id: 22062919-001 MS Sample Id: 22062919-001 S MSD Sample Id: 22062919-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acetone	<5.000	50.00	29.49	59	30.02	60	32-96	2	25	ug/L	
Benzene	<1.000	50.00	48.25	97	47.10	94	73-114	2	25	ug/L	
Bromochloromethane	<1.000	50.00	53.38	107	52.43	105	70-114	2	25	ug/L	
Bromodichloromethane	<1.000	50.00	49.17	98	48.74	97	71-118	1	25	ug/L	
Bromoform	<1.000	50.00	55.56	111	54.04	108	59-127	3	25	ug/L	
Bromomethane	<1.000	50.00	43.95	88	42.63	85	26-131	3	25	ug/L	
2-Butanone (MEK)	<5.000	50.00	40.82	82	41.58	83	45-109	2	25	ug/L	
Carbon Disulfide	<1.000	50.00	51.86	104	50.02	100	71-130	4	25	ug/L	
Carbon tetrachloride	<1.000	50.00	52.60	105	50.56	101	74-119	4	25	ug/L	
Chlorobenzene	<1.000	50.00	51.91	104	50.36	101	73-115	3	25	ug/L	
Chloroethane	2.770	50.00	47.37	89	45.10	85	60-124	5	25	ug/L	
Chloroform	<1.000	50.00	46.27	93	45.08	90	70-113	3	25	ug/L	
Chloromethane	<1.000	50.00	40.77	82	37.81	76	32-170	8	25	ug/L	
Cyclohexane	<1.000	50.00	47.14	94	45.02	90	64-144	5	25	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	50.46	101	49.58	99	48-140	2	25	ug/L	
Dibromochloromethane	<1.000	50.00	60.13	120	59.80	120	73-120	1	25	ug/L	
1,2-Dibromoethane	<1.000	50.00	51.02	102	50.84	102	71-119	0	25	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.95	108	51.40	103	68-122	5	25	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.90	108	51.25	103	69-122	5	25	ug/L	
Dichlorodifluoromethane	<1.000	50.00	53.10	106	49.36	99	61-118	7	25	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	53.06	106	50.21	100	68-120	6	25	ug/L	
1,1-Dichloroethane	33.57	50.00	84.10	101	81.81	96	68-122	3	25	ug/L	
1,2-Dichloroethane	1.030	50.00	45.48	89	45.07	88	61-120	1	25	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	51.06	102	49.76	100	71-116	3	25	ug/L	
1,1-Dichloroethene	137.8	50.00	210.2	145	203	130	69-120	3	25	ug/L	X
1,2-Dichloropropane	<1.000	50.00	46.98	94	46.68	93	69-119	1	25	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	51.63	103	51.42	103	72-123	0	25	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	50.90	102	51.01	102	67-123	0	25	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	51.32	103	48.94	98	70-118	5	25	ug/L	
Ethylbenzene	<1.000	50.00	51.48	103	49.46	99	74-121	4	25	ug/L	
2-Hexanone (MBK)	<5.000	50.00	43.38	87	44.40	89	44-131	2	25	ug/L	
Isopropylbenzene	<1.000	50.00	50.79	102	49.77	100	68-131	2	25	ug/L	
Methyl Acetate	<1.000	50.00	59.71	119	60.09	120	55-117	1	25	ug/L	X
Methylcyclohexane	<1.000	50.00	49.21	98	46.78	94	71-126	5	25	ug/L	
Methylene chloride	<1.000	50.00	49.35	99	47.98	96	72-114	3	25	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	44.41	89	45.68	91	49-133	3	25	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	49.49	99	50.22	100	67-112	1	25	ug/L	
Naphthalene	<1.000	50.00	52.83	106	48.56	97	53-128	8	25	ug/L	
Styrene	<1.000	50.00	51.35	103	48.91	98	75-126	5	25	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.58	97	48.55	97	61-125	0	25	ug/L	
Tetrachloroethene	<1.000	50.00	52.98	106	51.23	102	71-121	3	25	ug/L	
Toluene	<1.000	50.00	50.52	101	49.43	99	71-115	2	25	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	52.73	105	48.45	97	60-124	8	25	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	52.76	106	47.88	96	57-126	10	25	ug/L	
1,1,1-Trichloroethane	14.50	50.00	68.26	108	65.97	103	72-121	3	25	ug/L	
Trichloroethene	<1.000	50.00	52.40	105	50.73	101	72-115	3	25	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.31	99	49.46	99	70-114	0	25	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.59	95	45.51	91	66-130	4	25	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	46.21	92	43.54	87	71-121	6	25	ug/L	
Vinyl chloride	<1.000	50.00	40.24	80	33.55	67	40-160	18	25	ug/L	
m&p-Xylene	<2.000	100	101.5	102	96.53	97	73-125	5	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 195213 Matrix: Ground Water Date Prep: 07/01/22
Parent Sample Id: 22062919-001 MS Sample Id: 22062919-001 S MSD Sample Id: 22062919-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
o-Xylene	<1.000	50.00	49.36	99	46.87	94	71-126	5	25	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	96		98		88-120	%
Dibromofluoromethane	101		100		92-107	%
Toluene-D8	100		100		95-106	%

Analytical Method: SW-846 8260 D-SIM Prep Method: SW5030B
Seq Number: 195232 Matrix: Water Date Prep: 07/02/22
MB Sample Id: 91370-1-BLK LCS Sample Id: 91370-1-BKS LCSD Sample Id: 91370-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	28.52	95	26.64	89	50-150	7	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	100		100		99		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: EPA 624 .1

Seq Number: 193723 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/22 13:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.04831	97	60-139	mg/L	
Acrylonitrile	0.05000	0.04814	96	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.04816	96	54-148	mg/L	
Chloromethane	0.05000	0.04439	89	57-135	mg/L	
Vinyl Chloride	0.05000	0.04162	83	64-129	mg/L	
Bromomethane	0.05000	0.04558	91	67-132	mg/L	
Chloroethane	0.05000	0.04480	90	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.04649	93	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05205	104	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.04727	95	67-126	mg/L	
Methylene Chloride	0.05000	0.04623	92	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.04779	96	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.04746	95	76-127	mg/L	
Chloroform	0.05000	0.04623	92	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.04882	98	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.04920	98	73-130	mg/L	
Benzene	0.05000	0.04704	94	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.04632	93	77-129	mg/L	
Trichloroethene	0.05000	0.04757	95	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.04775	96	74-129	mg/L	
Bromodichloromethane	0.05000	0.04930	99	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05202	104	76-116	mg/L	
Toluene	0.05000	0.04682	94	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05382	108	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.04718	94	78-127	mg/L	
Tetrachloroethylene	0.05000	0.04802	96	78-128	mg/L	
Dibromochloromethane	0.05000	0.05109	102	70-132	mg/L	
Chlorobenzene	0.05000	0.04766	95	72-128	mg/L	
Ethylbenzene	0.05000	0.04893	98	69-131	mg/L	
Bromoform	0.05000	0.05274	105	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.04749	95	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.04845	97	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.04826	97	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.04815	96	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	99	85-147	%	
Toluene-D8	100	88-110	%	

Analytical Method: SW-846 8260 D

Seq Number: 195213 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 07/01/22 08:00

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	42.53	85	80-120	ug/L	
Benzene	50.00	43.96	88	80-120	ug/L	
Bromochloromethane	50.00	49.01	98	80-120	ug/L	
Bromodichloromethane	50.00	45.43	91	80-120	ug/L	
Bromoform	50.00	50.87	102	80-120	ug/L	
Bromomethane	50.00	38.92	78	80-120	ug/L	X
2-Butanone (MEK)	50.00	42.80	86	80-120	ug/L	
Carbon Disulfide	50.00	46.01	92	80-120	ug/L	
Carbon tetrachloride	50.00	47.57	95	80-120	ug/L	
Chlorobenzene	50.00	47.23	94	80-120	ug/L	
Chloroethane	50.00	41.07	82	80-120	ug/L	
Chloroform	50.00	42.07	84	80-120	ug/L	
Chloromethane	50.00	37.31	75	80-120	ug/L	X
Cyclohexane	50.00	43.56	87	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	42.96	86	80-120	ug/L	
Dibromochloromethane	50.00	55.92	112	80-120	ug/L	
1,2-Dibromoethane	50.00	46.23	92	80-120	ug/L	
1,2-Dichlorobenzene	50.00	48.19	96	80-120	ug/L	
1,3-Dichlorobenzene	50.00	48.70	97	80-120	ug/L	
Dichlorodifluoromethane	50.00	51.22	102	80-120	ug/L	
1,4-Dichlorobenzene	50.00	47.92	96	80-120	ug/L	
1,1-Dichloroethane	50.00	41.47	83	80-120	ug/L	
1,2-Dichloroethane	50.00	40.89	82	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	45.32	91	80-120	ug/L	
1,1-Dichloroethene	50.00	44.28	89	80-120	ug/L	
1,2-Dichloropropane	50.00	42.73	85	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	47.52	95	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	47.23	94	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	45.92	92	80-120	ug/L	
Ethylbenzene	50.00	46.77	94	80-120	ug/L	
2-Hexanone (MBK)	50.00	41.66	83	80-120	ug/L	
Isopropylbenzene	50.00	47.15	94	80-120	ug/L	
Methyl Acetate	50.00	51.71	103	80-120	ug/L	
Methylcyclohexane	50.00	47.43	95	80-120	ug/L	
Methylene chloride	50.00	44.66	89	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	39.43	79	80-120	ug/L	X
Methyl-t-Butyl Ether	50.00	44.40	89	80-120	ug/L	
Naphthalene	50.00	42.85	86	80-120	ug/L	
Styrene	50.00	46.12	92	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	43.26	87	80-120	ug/L	
Tetrachloroethene	50.00	49.29	99	80-120	ug/L	
Toluene	50.00	46.33	93	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	46.13	92	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	45.68	91	80-120	ug/L	
1,1,1-Trichloroethane	50.00	43.99	88	80-120	ug/L	
Trichloroethene	50.00	46.87	94	80-120	ug/L	
1,1,2-Trichloroethane	50.00	45.48	91	80-120	ug/L	
Trichlorofluoromethane	50.00	44.70	89	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	44.43	89	80-120	ug/L	
Vinyl chloride	50.00	47.60	95	80-120	ug/L	
m&p-Xylene	100	92.33	92	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22062919

Analytical Method: SW-846 8260 D

Seq Number: 195213 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 07/01/22 08:00

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	44.45	89	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	96	80-120	%	
Dibromofluoromethane	100	80-120	%	
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 193721 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/22 13:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	46.61	93	70-130	ug/L	
Benzene	50.00	47.04	94	70-130	ug/L	
Bromochloromethane	50.00	47.66	95	70-130	ug/L	
Bromodichloromethane	50.00	49.30	99	70-130	ug/L	
Bromoform	50.00	52.74	105	70-130	ug/L	
Bromomethane	50.00	45.58	91	70-130	ug/L	
2-Butanone (MEK)	50.00	48.97	98	70-130	ug/L	
Carbon Disulfide	50.00	49.74	99	70-130	ug/L	
Carbon tetrachloride	50.00	49.20	98	70-130	ug/L	
Chlorobenzene	50.00	47.66	95	70-130	ug/L	
Chloroethane	50.00	44.80	90	70-130	ug/L	
Chloroform	50.00	46.23	92	70-130	ug/L	
Chloromethane	50.00	44.39	89	70-130	ug/L	
Cyclohexane	50.00	48.62	97	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	52.85	106	70-130	ug/L	
Dibromochloromethane	50.00	51.09	102	70-130	ug/L	
1,2-Dibromoethane	50.00	49.69	99	70-130	ug/L	
1,2-Dichlorobenzene	50.00	48.15	96	70-130	ug/L	
1,3-Dichlorobenzene	50.00	48.45	97	70-130	ug/L	
Dichlorodifluoromethane	50.00	48.16	96	70-130	ug/L	
1,4-Dichlorobenzene	50.00	48.26	97	70-130	ug/L	
1,1-Dichloroethane	50.00	47.46	95	70-130	ug/L	
1,2-Dichloroethane	50.00	46.32	93	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	47.49	95	70-130	ug/L	
1,1-Dichloroethene	50.00	47.27	95	70-130	ug/L	
1,2-Dichloropropane	50.00	47.75	96	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	52.02	104	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	53.82	108	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	47.79	96	70-130	ug/L	
Ethylbenzene	50.00	48.93	98	70-130	ug/L	
2-Hexanone (MBK)	50.00	52.03	104	70-130	ug/L	
Isopropylbenzene	50.00	49.18	98	70-130	ug/L	
Methyl Acetate	50.00	49.64	99	70-130	ug/L	
Methylcyclohexane	50.00	49.29	99	70-130	ug/L	
Methylene chloride	50.00	46.23	92	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	51.65	103	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	49.67	99	70-130	ug/L	
Naphthalene	50.00	54.39	109	70-130	ug/L	
Styrene	50.00	50.37	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	47.49	95	70-130	ug/L	
Tetrachloroethene	50.00	48.02	96	70-130	ug/L	
Toluene	50.00	46.82	94	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	51.78	104	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	51.96	104	70-130	ug/L	
1,1,1-Trichloroethane	50.00	48.82	98	70-130	ug/L	
Trichloroethene	50.00	47.57	95	70-130	ug/L	
1,1,2-Trichloroethane	50.00	47.18	94	70-130	ug/L	
Trichlorofluoromethane	50.00	46.49	93	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	48.06	96	70-130	ug/L	
Vinyl chloride	50.00	41.62	83	70-130	ug/L	
m&p-Xylene	100	97.54	98	70-130	ug/L	

Analytical Method: SW-846 8260 D

Seq Number: 193721 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/22 13:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	48.04	96	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	99	70-130	%	
Dibromofluoromethane	101	70-130	%	
Toluene-D8	100	70-130	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 195232 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 07/02/22 11:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.52	95	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 195232 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/02/22 11:33

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	25.93	86	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 220629 19 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1	1										Analysis/ Method Required ③
																				VOCs (8260)	1,4-Dioxane (8260 SIM)	VOCs (624)
1	Influent VSP-1	6/26/22	1300	GW	6	G														X	X	
2	Effluent VSP-4	6/29/22	0845	WW	3	G															X	
3	TB-062622	—		TB	4	—															X	X

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1)	6/29/22	1155	
(2)			
(3)			
(4)			

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: Pres

Custody Seal: Pres / Cooler

Coolers: 1 Temp: 2.4-4.4°C TB-2.1°C

Shipping Carrier: Client

Special Instructions:
Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22062919

Client Name WSP USA - Herndon
Disposal Date 08/03/2022

Received By Marissa Vertucci
Date Received 06/29/2022 11:55:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	4.6
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 06/29/2022

PM Review and Approval: Amber Confer Date: 06/29/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082402

September 8, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22082402**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22082402**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 28, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22082402

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/24/2022 at 11:09 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22082402-001	Effluent VSP-4	WASTE WATER	08/24/22 09:40

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082402

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/24/2022 09:40** **PSS Sample ID: 22082402-001**
Matrix: WASTE WATER **Date/Time Received: 08/24/2022 11:09**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**6.9**	ug/L	1.0		1	08/24/22	08/26/22 19:37	1064
Lead	**1.0**	ug/L	1.0		1	08/24/22	08/25/22 15:00	1064
Nickel	**16.5**	ug/L	1.00		1	08/24/22	08/26/22 19:37	1064
Zinc	**34.5**	ug/L	20.0		1	08/24/22	08/25/22 15:00	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.8**	ug/L	1.0		1	08/24/22	08/26/22 18:18	1064
Lead	ND	ug/L	1.0		1	08/24/22	08/26/22 18:18	1064
Nickel	**15.0**	ug/L	1.00		1	08/24/22	08/26/22 18:18	1064
Zinc	**21.4**	ug/L	20.0		1	08/24/22	08/26/22 18:18	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	08/25/22	08/25/22 13:12	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Acrylonitrile	ND	ug/L	5.0		1	08/25/22	08/25/22 13:12	1011
Chloromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Vinyl Chloride	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Bromomethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Chloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Methylene Chloride	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Chloroform	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Benzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082402

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/24/2022 09:40** **PSS Sample ID: 22082402-001**
Matrix: WASTE WATER **Date/Time Received: 08/24/2022 11:09**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Bromodichloromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Toluene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Tetrachloroethylene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Chlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Ethylbenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
Bromoform	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:12	1011

Surrogate(s)	***Recovery***		***Limits***				
Dibromofluoromethane	*99*	*%*	*87-120*		*1*	*08/25/22*	*08/25/22 13:12*	*1011*
4-Bromofluorobenzene	*102*	*%*	*85-147*		*1*	*08/25/22*	*08/25/22 13:12*	*1011*
Toluene-D8	*100*	*%*	*88-110*		*1*	*08/25/22*	*08/25/22 13:12*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**22**	mg/L	0.66		1	08/24/22	08/30/22 13:14	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082402

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/24/2022 09:40** **PSS Sample ID: 22082402-001**
Matrix: WASTE WATER **Date/Time Received: 08/24/2022 11:09**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	08/24/22	08/24/22 17:25	1073

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 24-Aug-22 14:03

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		08/24/22	08/29/22 15:00	4005

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Project Name: Kop-Flex

PSS Project No.: 22082402

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22082402: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.
Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22082402

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22082402-001	W	92023	196644	08/24/2022 12:50	08/25/2022 15:00
	92023-1-BKS	BKS	92023-1-BKS	W	92023	196644	08/24/2022 10:30	08/25/2022 14:14
	92023-1-BLK	BLK	92023-1-BLK	W	92023	196644	08/24/2022 10:30	08/25/2022 14:09
	Covanta FFX S	MS	22082209-001 S	W	92023	196644	08/24/2022 10:30	08/25/2022 14:36
	Covanta FFX SD	MSD	22082209-001 S	W	92023	196644	08/24/2022 10:30	08/25/2022 14:40
	92023-1-BKS	Reanalysis	92023-1-BKS	W	92023	196709	08/24/2022 10:30	08/26/2022 19:12
	92023-1-BLK	Reanalysis	92023-1-BLK	W	92023	196709	08/24/2022 10:30	08/26/2022 19:07
	Effluent VSP-4	Reanalysis	22082402-001	W	92023	196709	08/24/2022 12:50	08/26/2022 19:37
EPA 200.8 Dissolved	92028-1-BKS	BKS	92028-1-BKS	W	92028	196625	08/24/2022 12:51	08/24/2022 20:27
	92028-1-BLK	BLK	92028-1-BLK	W	92028	196625	08/24/2022 12:51	08/24/2022 20:23
	Discharge Sample S	MS	22081808-001 S	W	92028	196625	08/24/2022 12:51	08/24/2022 20:37
	Discharge Sample SD	MSD	22081808-001 S	W	92028	196625	08/24/2022 12:51	08/24/2022 20:41
	92028-1-BKS	Reanalysis	92028-1-BKS	W	92028	196713	08/24/2022 12:51	08/26/2022 18:09
	92028-1-BLK	Reanalysis	92028-1-BLK	W	92028	196713	08/24/2022 12:51	08/26/2022 18:04
	Effluent VSP-4	Reanalysis	22082402-001	W	92028	196713	08/24/2022 12:51	08/26/2022 18:18
EPA 624 .1	Effluent VSP-4	Initial	22082402-001	W	92043	196626	08/25/2022 08:18	08/25/2022 13:12
	92043-1-BKS	BKS	92043-1-BKS	W	92043	196626	08/25/2022 08:18	08/25/2022 08:48
	92043-1-BLK	BLK	92043-1-BLK	W	92043	196626	08/25/2022 08:18	08/25/2022 10:27
	13977-Eff-8/22 S	MS	22082206-001 S	W	92043	196626	08/25/2022 08:18	08/25/2022 15:06
	13977-Eff-8/22 SD	MSD	22082206-001 S	W	92043	196626	08/25/2022 08:18	08/25/2022 15:29
SM 2340B	Effluent VSP-4	Initial	22082402-001	W	92051	196768	08/24/2022 10:30	08/30/2022 13:14
SM 2540D -2015	Effluent VSP-4	Initial	22082402-001	W	196617	196617	08/24/2022 17:25	08/24/2022 17:25
	196617-1-BKS	BKS	196617-1-BKS	W	196617	196617	08/24/2022 17:25	08/24/2022 17:25
	196617-1-BLK	BLK	196617-1-BLK	W	196617	196617	08/24/2022 17:25	08/24/2022 17:25
	13977-Eff-8/22 D	MD	22082206-001 D	W	196617	196617	08/24/2022 17:25	08/24/2022 17:25
	2022-Q3-B3-001 D	MD	22082410-002 D	W	196617	196617	08/24/2022 17:25	08/24/2022 17:25
SM 5210B -2011	Effluent VSP-4	Initial	22082402-001	W	196809	196809	08/24/2022 14:03	08/29/2022 15:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082402

Analytical Method: SM 2540D -2015
Seq Number: 196617 Matrix: Water
MB Sample Id: 196617-1-BLK LCS Sample Id: 196617-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	100.2	94.70	95	86-110	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 196644 Matrix: Water Date Prep: 08/24/22
MB Sample Id: 92023-1-BLK LCS Sample Id: 92023-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	50.00	45.26	91	85-115	ug/L	
Zinc	<20.00	100	89.87	90	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 196709 Matrix: Water Date Prep: 08/24/22
MB Sample Id: 92023-1-BLK LCS Sample Id: 92023-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	44.01	88	85-115	ug/L	
Nickel	<1.000	50.00	45.18	90	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 196625 Matrix: Water Date Prep: 08/24/22
MB Sample Id: 92028-1-BLK LCS Sample Id: 92028-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	50.00	44.05	88	85-115	ug/L	
Zinc	<20.00	100	88.19	88	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 196713 Matrix: Water Date Prep: 08/24/22
MB Sample Id: 92028-1-BLK LCS Sample Id: 92028-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	45.21	90	85-115	ug/L	
Nickel	<1.000	50.00	44.77	90	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082402

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 196626
Matrix: Water
Date Prep: 08/25/22
MB Sample Id: 92043-1-BLK
LCS Sample Id: 92043-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	45.42	91	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	44.20	88	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	41.42	83	54-148	ug/L	
Chloromethane	<0.001000	50.00	43.04	86	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	49.04	98	5-195	ug/L	
Bromomethane	<0.001000	50.00	47.74	95	15-185	ug/L	
Chloroethane	<0.001000	50.00	41.36	83	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	49.50	99	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	38.20	76	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	50.31	101	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	50.75	102	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	52.02	104	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	49.84	100	70-130	ug/L	
Chloroform	0.1000	50.00	50.40	101	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.53	101	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	52.47	105	70-130	ug/L	
Benzene	<0.001000	50.00	51.64	103	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	49.76	100	70-130	ug/L	
Trichloroethene	<0.001000	50.00	51.86	104	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	50.13	100	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	52.72	105	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	49.33	99	25-175	ug/L	
Toluene	<0.001000	50.00	51.14	102	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.86	98	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	52.20	104	70-130	ug/L	
Tetrachloroethylene	<0.001000	50.00	53.97	108	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	50.67	101	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	51.89	104	65-135	ug/L	
Ethylbenzene	<0.001000	50.00	51.63	103	60-140	ug/L	
Bromoform	<0.001000	50.00	51.72	103	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	50.14	100	60-140	ug/L	
1,3-Dichlorobenzene	<0.001000	50.00	51.87	104	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	51.37	103	65-135	ug/L	
1,2-Dichlorobenzene	<0.001000	50.00	52.62	105	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		101		87-120	%
4-Bromofluorobenzene	102		95		85-147	%
Toluene-D8	99		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 196644 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 08/25/22 14:26

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	109.9	110	85-115	ug/L	
Zinc	200	204.2	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 196644 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 08/25/22 15:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	103.1	103	85-115	ug/L	
Zinc	200	206.5	103	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 196709 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 08/26/22 18:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	97.68	98	85-115	ug/L	
Lead	100	100.2	100	85-115	ug/L	
Nickel	100	103	103	85-115	ug/L	
Zinc	200	204.5	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 196709 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 08/26/22 20:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	96.22	96	85-115	ug/L	
Lead	100	100.2	100	85-115	ug/L	
Nickel	100	101	101	85-115	ug/L	
Zinc	200	198.6	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 196644 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/25/22 13:16

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	53.69	107	90-110	ug/L	
Zinc	100	105.3	105	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082402

Analytical Method: EPA 200.8

Seq Number: 196709 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/26/22 17:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.26	101	90-110	ug/L	
Lead	50.00	50.55	101	90-110	ug/L	
Nickel	50.00	50.47	101	90-110	ug/L	
Zinc	100	104.7	105	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 196713 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 08/26/22 18:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	97.68	98	85-115	ug/L	
Lead	100	100.2	100	85-115	ug/L	
Nickel	100	103	103	85-115	ug/L	
Zinc	200	204.5	102	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 196713 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/26/22 17:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.26	101	90-110	ug/L	
Lead	50.00	50.55	101	90-110	ug/L	
Nickel	50.00	50.47	101	90-110	ug/L	
Zinc	100	104.7	105	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082402

Analytical Method: EPA 624 .1

Seq Number: 196354 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05412	108	60-139	mg/L	
Acrylonitrile	0.05000	0.05601	112	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05421	108	54-148	mg/L	
Chloromethane	0.05000	0.05509	110	57-135	mg/L	
Vinyl Chloride	0.05000	0.05214	104	64-129	mg/L	
Bromomethane	0.05000	0.05621	112	67-132	mg/L	
Chloroethane	0.05000	0.05353	107	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05473	109	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.06209	124	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05540	111	67-126	mg/L	
Methylene Chloride	0.05000	0.05618	112	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05684	114	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05641	113	76-127	mg/L	
Chloroform	0.05000	0.05447	109	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05698	114	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05752	115	73-130	mg/L	
Benzene	0.05000	0.05625	113	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05450	109	77-129	mg/L	
Trichloroethene	0.05000	0.05637	113	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05729	115	74-129	mg/L	
Bromodichloromethane	0.05000	0.05761	115	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05582	112	76-116	mg/L	
Toluene	0.05000	0.05521	110	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05572	111	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05636	113	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05517	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05502	110	70-132	mg/L	
Chlorobenzene	0.05000	0.05607	112	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05478	110	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05948	119	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05753	115	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05733	115	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05838	117	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	102	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22082402 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannan Burke / Tushar Khaire | DW CERT #:

Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1,6	6	6	3	3						
							Analysis/ Method Required	VOCs (624)	TSS	BOD	Total metals + hardness	Dissolved metals (filtered)						
1	Effluent VSP-4	8/24/22	0940	WW	7	G		X	X	X	X	X						

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannan Burke	8/24/22	1025	Dan Carter
(2) Dan Carter	08/24/22	1109	Yellymar
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: PRES/COOLER TB 1.3°C

Coolers: 1 Temp: 1.4-2.3°C

Shipping Carrier: FTE

Special Instructions: Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22082402

Client Name WSP USA - Herndon
Disposal Date 09/28/2022

Received By Jillian Chapman
Date Received 08/24/2022 11:09:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.3
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	S. Burke/T. Khaire
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 08/24/2022

PM Review and Approval: Amber Confer Date: 08/24/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082403

September 8, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22082403**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22082403**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 28, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22082403

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/24/2022 at 11:09 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22082403-001	Influent VSP-1	GROUND WATER	08/24/22 10:10
22082403-002	Effluent VSP-4	WASTE WATER	08/24/22 09:40
22082403-003	TB-082422	WATER	08/24/22 11:09

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082403

Sample ID: Influent VSP-1 **Date/Time Sampled: 08/24/2022 10:10** **PSS Sample ID: 22082403-001**
Matrix: GROUND WATER **Date/Time Received: 08/24/2022 11:09**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 196903 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	09/02/22	09/02/22 20:24	1011
Benzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Bromochloromethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Bromoform	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Bromomethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	09/02/22	09/02/22 20:24	1011
Carbon Disulfide	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Carbon tetrachloride	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Chlorobenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Chloroethane	**2.6**	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Chloroform	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Chloromethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Cyclohexane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,1-Dichloroethane	**42**	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2-Dichloroethane	**1.4**	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,1-Dichloroethene	**240**	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Ethylbenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	09/02/22	09/02/22 20:24	1011
Isopropylbenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Methyl Acetate	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Methylcyclohexane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Methylene chloride	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082403

Sample ID: Influent VSP-1 **Date/Time Sampled: 08/24/2022 10:10** **PSS Sample ID: 22082403-001**
Matrix: GROUND WATER **Date/Time Received: 08/24/2022 11:09**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 196903 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	09/02/22	09/02/22 20:24	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Naphthalene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Styrene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Tetrachloroethene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Toluene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,1,1-Trichloroethane	**54**	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Trichloroethene	**1.9**	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
Vinyl chloride	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011
m&p-Xylene	ND	ug/L	2.0		1	09/02/22	09/02/22 20:24	1011
o-Xylene	ND	ug/L	1.0		1	09/02/22	09/02/22 20:24	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*100*	*%*	*88-120*		*1*	*09/02/22*	*09/02/22 20:24*	*1011*
Dibromofluoromethane	*101*	*%*	*92-107*		*1*	*09/02/22*	*09/02/22 20:24*	*1011*
Toluene-D8	*100*	*%*	*95-106*		*1*	*09/02/22*	*09/02/22 20:24*	*1011*

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**160**	ug/L	10		10	09/01/22	09/01/22 13:45	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*98*	*%*	*80-120*		*10*	*09/01/22*	*09/01/22 13:45*	*1011*

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Project Name: Kop-Flex
PSS Project No.: 22082403

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/24/2022 09:40** **PSS Sample ID: 22082403-002**
Matrix: WASTE WATER **Date/Time Received: 08/24/2022 11:09**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	09/01/22	09/01/22 13:01	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*09/01/22*	*09/01/22 13:01*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082403

Sample ID: TB-082422 **Date/Time Sampled: 08/24/2022 11:09** **PSS Sample ID: 22082403-003**
Matrix: WATER **Date/Time Received: 08/24/2022 11:09**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	08/25/22	08/25/22 13:35	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Acrylonitrile	ND	ug/L	5.0		1	08/25/22	08/25/22 13:35	1011
Chloromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Vinyl Chloride	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Bromomethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Chloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Methylene Chloride	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Chloroform	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Benzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Trichloroethene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Bromodichloromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Toluene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Tetrachloroethylene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Chlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Ethylbenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
Bromoform	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/25/22	08/25/22 13:35	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22082403

Sample ID: TB-082422 **Date/Time Sampled: 08/24/2022 11:09** **PSS Sample ID: 22082403-003**
Matrix: WATER **Date/Time Received: 08/24/2022 11:09**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*99*	*%*	*87-120*	*1*	*08/25/22*	*08/25/22 13:35*	*1011*
4-Bromofluorobenzene	*101*	*%*	*85-147*	*1*	*08/25/22*	*08/25/22 13:35*	*1011*
Toluene-D8	*100*	*%*	*88-110*	*1*	*08/25/22*	*08/25/22 13:35*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	09/01/22	09/01/22 13:23	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*99*	*%*	*80-120*	*1*	*09/01/22*	*09/01/22 13:23*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22082403

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

TCL Volatile Organic Compounds

Batch: 196903

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22082403

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-082422	Initial	22082403-003	W	92043	196626	08/25/2022 08:18	08/25/2022 13:35
	92043-1-BKS	BKS	92043-1-BKS	W	92043	196626	08/25/2022 08:18	08/25/2022 08:48
	92043-1-BLK	BLK	92043-1-BLK	W	92043	196626	08/25/2022 08:18	08/25/2022 10:27
	13977-Eff-8/22 S	MS	22082206-001 S	W	92043	196626	08/25/2022 08:18	08/25/2022 15:06
	13977-Eff-8/22 SD	MSD	22082206-001 S	W	92043	196626	08/25/2022 08:18	08/25/2022 15:29
SW-846 8260 D	Influent VSP-1	Initial	22082403-001	W	92163	196903	09/02/2022 09:08	09/02/2022 20:24
	92163-1-BKS	BKS	92163-1-BKS	W	92163	196903	09/02/2022 09:08	09/02/2022 09:08
	92163-1-BLK	BLK	92163-1-BLK	W	92163	196903	09/02/2022 09:08	09/02/2022 10:24
	MW-11 S	MS	22083106-007 S	W	92163	196903	09/02/2022 09:08	09/02/2022 13:12
	MW-11 SD	MSD	22083106-007 S	W	92163	196903	09/02/2022 09:08	09/02/2022 13:35
SW-846 8260 D-SIM	Influent VSP-1	Initial	22082403-001	W	92156	196891	09/01/2022 07:48	09/01/2022 13:45
	Effluent VSP-4	Initial	22082403-002	W	92156	196891	09/01/2022 07:48	09/01/2022 13:01
	TB-082422	Initial	22082403-003	W	92156	196891	09/01/2022 07:48	09/01/2022 13:23
	92156-1-BKS	BKS	92156-1-BKS	W	92156	196891	09/01/2022 07:48	09/01/2022 11:32
	92156-1-BLK	BLK	92156-1-BLK	W	92156	196891	09/01/2022 07:48	09/01/2022 12:38
	92156-1-BSD	BSD	92156-1-BSD	W	92156	196891	09/01/2022 07:48	09/01/2022 11:54

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 196626
Matrix: Water
Date Prep: 08/25/22
MB Sample Id: 92043-1-BLK
LCS Sample Id: 92043-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	45.42	91	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	44.20	88	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	41.42	83	54-148	ug/L	
Chloromethane	<0.001000	50.00	43.04	86	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	49.04	98	5-195	ug/L	
Bromomethane	<0.001000	50.00	47.74	95	15-185	ug/L	
Chloroethane	<0.001000	50.00	41.36	83	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	49.50	99	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	38.20	76	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	50.31	101	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	50.75	102	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	52.02	104	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	49.84	100	70-130	ug/L	
Chloroform	0.1000	50.00	50.40	101	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.53	101	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	52.47	105	70-130	ug/L	
Benzene	<0.001000	50.00	51.64	103	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	49.76	100	70-130	ug/L	
Trichloroethene	<0.001000	50.00	51.86	104	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	50.13	100	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	52.72	105	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	49.33	99	25-175	ug/L	
Toluene	<0.001000	50.00	51.14	102	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.86	98	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	52.20	104	70-130	ug/L	
Tetrachloroethylene	<0.001000	50.00	53.97	108	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	50.67	101	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	51.89	104	65-135	ug/L	
Ethylbenzene	<0.001000	50.00	51.63	103	60-140	ug/L	
Bromoform	<0.001000	50.00	51.72	103	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	50.14	100	60-140	ug/L	
1,3-Dichlorobenzene	<0.001000	50.00	51.87	104	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	51.37	103	65-135	ug/L	
1,2-Dichlorobenzene	<0.001000	50.00	52.62	105	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		101		87-120	%
4-Bromofluorobenzene	102		95		85-147	%
Toluene-D8	99		100		88-110	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 196903
Matrix: Water
Date Prep: 09/02/22
MB Sample Id: 92163-1-BLK
LCS Sample Id: 92163-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	41.15	82	49-154	ug/L	
Benzene	<1.000	50.00	52.53	105	76-112	ug/L	
Bromochloromethane	<1.000	50.00	56.58	113	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	53.50	107	78-117	ug/L	
Bromoform	<1.000	50.00	55.82	112	69-123	ug/L	
Bromomethane	<1.000	50.00	51.23	102	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	43.31	87	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	50.46	101	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	54.44	109	77-119	ug/L	
Chlorobenzene	<1.000	50.00	55.01	110	76-114	ug/L	
Chloroethane	<1.000	50.00	40.31	81	61-113	ug/L	
Chloroform	<1.000	50.00	50.61	101	75-113	ug/L	
Chloromethane	<1.000	50.00	38.52	77	41-148	ug/L	
Cyclohexane	<1.000	50.00	50.21	100	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	45.21	90	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	53.40	107	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	54.63	109	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	57.61	115	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	57.16	114	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	33.76	68	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	56.90	114	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.52	99	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.02	96	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	54.74	109	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	51.47	103	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.22	100	76-115	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	50.74	101	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	50.34	101	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	54.35	109	73-121	ug/L	
Ethylbenzene	<1.000	50.00	53.89	108	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	41.84	84	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	55.88	112	76-126	ug/L	
Methyl Acetate	<1.000	50.00	49.77	100	61-117	ug/L	
Methylcyclohexane	<1.000	50.00	53.94	108	82-126	ug/L	
Methylene chloride	<1.000	50.00	51.93	104	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	42.27	85	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	49.67	99	71-114	ug/L	
Naphthalene	<1.000	50.00	43.18	86	60-122	ug/L	
Styrene	<1.000	50.00	56.57	113	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	53.79	108	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	58.21	116	76-123	ug/L	
Toluene	<1.000	50.00	53.25	107	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	51.01	102	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	49.68	99	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.15	104	79-118	ug/L	
Trichloroethene	<1.000	50.00	54.26	109	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	53.74	107	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.99	98	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	52.81	106	77-123	ug/L	
Vinyl chloride	<1.000	50.00	43.95	88	53-151	ug/L	
m&p-Xylene	<2.000	100	109.9	110	79-121	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 196903
Matrix: Water
Date Prep: 09/02/22
MB Sample Id: 92163-1-BLK
LCS Sample Id: 92163-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	55.35	111	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	98		95		88-120	%
Dibromofluoromethane	100		100		92-107	%
Toluene-D8	99		99		95-106	%

Analytical Method: SW-846 8260 D-SIM
Prep Method: SW5030B
Seq Number: 196891
Matrix: Water
Date Prep: 09/01/22
MB Sample Id: 92156-1-BLK
LCS Sample Id: 92156-1-BKS
LCSD Sample Id: 92156-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	29.02	97	29.85	100	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		98		101		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: EPA 624 .1

Seq Number: 196354 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05412	108	60-139	mg/L	
Acrylonitrile	0.05000	0.05601	112	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05421	108	54-148	mg/L	
Chloromethane	0.05000	0.05509	110	57-135	mg/L	
Vinyl Chloride	0.05000	0.05214	104	64-129	mg/L	
Bromomethane	0.05000	0.05621	112	67-132	mg/L	
Chloroethane	0.05000	0.05353	107	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05473	109	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.06209	124	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05540	111	67-126	mg/L	
Methylene Chloride	0.05000	0.05618	112	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05684	114	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05641	113	76-127	mg/L	
Chloroform	0.05000	0.05447	109	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05698	114	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05752	115	73-130	mg/L	
Benzene	0.05000	0.05625	113	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05450	109	77-129	mg/L	
Trichloroethene	0.05000	0.05637	113	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05729	115	74-129	mg/L	
Bromodichloromethane	0.05000	0.05761	115	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05582	112	76-116	mg/L	
Toluene	0.05000	0.05521	110	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05572	111	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05636	113	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05517	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05502	110	70-132	mg/L	
Chlorobenzene	0.05000	0.05607	112	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05478	110	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05948	119	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05753	115	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05733	115	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05838	117	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	102	85-147	%	
Toluene-D8	99	88-110	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: SW-846 8260 D

Seq Number: 196903 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 09/02/22 09:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	41.15	82	80-120	ug/L	
Benzene	50.00	52.53	105	80-120	ug/L	
Bromochloromethane	50.00	56.58	113	80-120	ug/L	
Bromodichloromethane	50.00	53.50	107	80-120	ug/L	
Bromoform	50.00	55.82	112	80-120	ug/L	
Bromomethane	50.00	51.23	102	80-120	ug/L	
2-Butanone (MEK)	50.00	43.31	87	80-120	ug/L	
Carbon Disulfide	50.00	50.46	101	80-120	ug/L	
Carbon tetrachloride	50.00	54.44	109	80-120	ug/L	
Chlorobenzene	50.00	55.01	110	80-120	ug/L	
Chloroethane	50.00	40.31	81	80-120	ug/L	
Chloroform	50.00	50.61	101	80-120	ug/L	
Chloromethane	50.00	38.52	77	80-120	ug/L	X
Cyclohexane	50.00	50.21	100	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	45.21	90	80-120	ug/L	
Dibromochloromethane	50.00	53.40	107	80-120	ug/L	
1,2-Dibromoethane	50.00	54.63	109	80-120	ug/L	
1,2-Dichlorobenzene	50.00	57.61	115	80-120	ug/L	
1,3-Dichlorobenzene	50.00	57.16	114	80-120	ug/L	
Dichlorodifluoromethane	50.00	33.76	68	80-120	ug/L	X
1,4-Dichlorobenzene	50.00	56.90	114	80-120	ug/L	
1,1-Dichloroethane	50.00	49.52	99	80-120	ug/L	
1,2-Dichloroethane	50.00	48.02	96	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	54.74	109	80-120	ug/L	
1,1-Dichloroethene	50.00	51.47	103	80-120	ug/L	
1,2-Dichloropropane	50.00	50.22	100	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	50.74	101	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	50.34	101	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	54.35	109	80-120	ug/L	
Ethylbenzene	50.00	53.89	108	80-120	ug/L	
2-Hexanone (MBK)	50.00	41.84	84	80-120	ug/L	
Isopropylbenzene	50.00	55.88	112	80-120	ug/L	
Methyl Acetate	50.00	49.77	100	80-120	ug/L	
Methylcyclohexane	50.00	53.94	108	80-120	ug/L	
Methylene chloride	50.00	51.93	104	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	42.27	85	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	49.67	99	80-120	ug/L	
Naphthalene	50.00	43.18	86	80-120	ug/L	
Styrene	50.00	56.57	113	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	53.79	108	80-120	ug/L	
Tetrachloroethene	50.00	58.21	116	80-120	ug/L	
Toluene	50.00	53.25	107	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	51.01	102	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	49.68	99	80-120	ug/L	
1,1,1-Trichloroethane	50.00	52.15	104	80-120	ug/L	
Trichloroethene	50.00	54.26	109	80-120	ug/L	
1,1,2-Trichloroethane	50.00	53.74	107	80-120	ug/L	
Trichlorofluoromethane	50.00	48.99	98	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	52.81	106	80-120	ug/L	
Vinyl chloride	50.00	43.95	88	80-120	ug/L	
m,p-Xylenes	100	109.9	110	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: SW-846 8260 D

Seq Number: 196903 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 09/02/22 09:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	55.35	111	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	95	80-120	%	
Dibromofluoromethane	100	80-120	%	
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 196353 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	54.16	108	70-130	ug/L	
Benzene	50.00	56.25	113	70-130	ug/L	
Bromochloromethane	50.00	56.97	114	70-130	ug/L	
Bromodichloromethane	50.00	57.61	115	70-130	ug/L	
Bromoform	50.00	54.78	110	70-130	ug/L	
Bromomethane	50.00	56.21	112	70-130	ug/L	
2-Butanone (MEK)	50.00	54.55	109	70-130	ug/L	
Carbon Disulfide	50.00	58.56	117	70-130	ug/L	
Carbon tetrachloride	50.00	57.52	115	70-130	ug/L	
Chlorobenzene	50.00	56.07	112	70-130	ug/L	
Chloroethane	50.00	53.53	107	70-130	ug/L	
Chloroform	50.00	54.47	109	70-130	ug/L	
Chloromethane	50.00	55.09	110	70-130	ug/L	
Cyclohexane	50.00	57.86	116	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	56.55	113	70-130	ug/L	
Dibromochloromethane	50.00	55.02	110	70-130	ug/L	
1,2-Dibromoethane	50.00	58.74	117	70-130	ug/L	
1,2-Dichlorobenzene	50.00	58.38	117	70-130	ug/L	
1,3-Dichlorobenzene	50.00	57.53	115	70-130	ug/L	
Dichlorodifluoromethane	50.00	54.21	108	70-130	ug/L	
1,4-Dichlorobenzene	50.00	57.33	115	70-130	ug/L	
1,1-Dichloroethane	50.00	56.41	113	70-130	ug/L	
1,2-Dichloroethane	50.00	54.50	109	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	57.31	115	70-130	ug/L	
1,1-Dichloroethene	50.00	55.40	111	70-130	ug/L	
1,2-Dichloropropane	50.00	57.29	115	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	55.82	112	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	55.72	111	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	56.84	114	70-130	ug/L	
Ethylbenzene	50.00	56.70	113	70-130	ug/L	
2-Hexanone (MBK)	50.00	56.67	113	70-130	ug/L	
Isopropylbenzene	50.00	59.62	119	70-130	ug/L	
Methyl Acetate	50.00	59.73	119	70-130	ug/L	
Methylcyclohexane	50.00	56.82	114	70-130	ug/L	
Methylene chloride	50.00	56.18	112	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	58.27	117	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	59.91	120	70-130	ug/L	
Naphthalene	50.00	58.87	118	70-130	ug/L	
Styrene	50.00	58.77	118	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	59.48	119	70-130	ug/L	
Tetrachloroethene	50.00	55.17	110	70-130	ug/L	
Toluene	50.00	55.21	110	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	58.23	116	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	57.72	115	70-130	ug/L	
1,1,1-Trichloroethane	50.00	56.98	114	70-130	ug/L	
Trichloroethene	50.00	56.37	113	70-130	ug/L	
1,1,2-Trichloroethane	50.00	56.36	113	70-130	ug/L	
Trichlorofluoromethane	50.00	54.73	109	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	55.17	110	70-130	ug/L	
Vinyl chloride	50.00	52.14	104	70-130	ug/L	
m&p-Xylene	100	112.6	113	70-130	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22082403

Analytical Method: SW-846 8260 D

Seq Number: 196353 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	56.32	113	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	102	70-130	%	
Dibromofluoromethane	101	70-130	%	
Toluene-D8	99	70-130	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 196891 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 09/01/22 11:09

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.55	99	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 196891 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 09/01/22 10:47

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.47	102	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22082403 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 3140545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke, Tushar Kapare | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes											Analysis/ Method Required: VOCs (8260)	1,4-dioxane	VOCs (624)
							1	1	1											
1	Influent VSP-1	8/24/22	1010	GW	6	G												X	X	
2	Effluent VSP-4	8/24/22	0940	WW	3	G													X	
3	TB-082422	—	—	TB	4	—													X	X

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	8/24/22	1025	Dan Carter
Relinquished By: (2)	Date	Time	Received By:
Dan Carter	08/24/22	1109	Yellow
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER _____

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: PRES/COOLER TB 1.8°C

Coolers: 1 Temp: ~~1.8-4.8°C~~ 1.4-2.3°C

Shipping Carrier: TTE

Special Instructions: Standard 10-day TAT

BKey JC

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22082403

Client Name WSP USA - Herndon
Disposal Date 09/28/2022

Received By Jillian Chapman
Date Received 08/24/2022 11:09:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.3
Seal(s) Signed / Dated?	Yes	Temp Blank Present	No

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 08/24/2022

PM Review and Approval: Amber Confer Date: 08/24/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092809

October 12, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22092809**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22092809**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 2, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22092809

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/28/2022 at 11:55 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22092809-001	Effluent VSP-4	WASTE WATER	09/28/22 07:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092809

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2022 07:30** **PSS Sample ID: 22092809-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2022 11:55**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**1.5**	ug/L	1.0		1	09/29/22	09/29/22 12:45	1059
Lead	ND	ug/L	1.0		1	09/29/22	09/29/22 12:45	1059
Nickel	**7.6**	ug/L	1.0		1	09/29/22	09/29/22 12:45	1059
Zinc	**23.0**	ug/L	20.0		1	09/29/22	09/29/22 12:45	1059

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	10/03/22	10/03/22 22:10	1064
Lead	ND	ug/L	1.0		1	10/03/22	10/03/22 22:10	1064
Nickel	**7.0**	ug/L	1.0		1	10/03/22	10/03/22 22:10	1064
Zinc	**21.4**	ug/L	20.0		1	10/03/22	10/03/22 22:10	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 197841 on Case Narrative.
pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	09/30/22	09/30/22 15:01	1011
Acrylonitrile	ND	ug/L	5.0		1	09/30/22	09/30/22 15:01	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Chloromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Bromomethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Chloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Methylene Chloride	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Chloroform	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Benzene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092809

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2022 07:30** **PSS Sample ID: 22092809-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2022 11:55**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 197841 on Case Narrative.

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Toluene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Chlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Ethylbenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
Bromoform	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 15:01	1011

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*101*	*%*	*94-108*		*1*	*09/30/22*	*09/30/22 15:01*	*1011*
4-Bromofluorobenzene	*89*	*%*	*77-120*		*1*	*09/30/22*	*09/30/22 15:01*	*1011*
Toluene-D8	*100*	*%*	*95-104*		*1*	*09/30/22*	*09/30/22 15:01*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**18**	mg/L	6.6		10	09/29/22	10/08/22 21:36	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092809

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2022 07:30** **PSS Sample ID: 22092809-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2022 11:55**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	09/28/22	09/28/22 17:30	1073

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 28-Sep-22 17:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		09/28/22	10/03/22 15:00	4005

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Project Name: Kop-Flex

PSS Project No.: 22092809

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

No sampling date or time on COC. Obtained from container labels.

22092809: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds

Batch: 197841

Matrix spike/matrix spike duplicate (MS/MSD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22092809

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22092809-001	W	92544	197781	09/29/2022 08:45	09/29/2022 12:45
	92544-1-BKS	BKS	92544-1-BKS	W	92544	197781	09/29/2022 08:45	09/29/2022 12:28
	92544-1-BLK	BLK	92544-1-BLK	W	92544	197781	09/29/2022 08:45	09/29/2022 12:24
	WSSC-Samp Pt FAC(B)-Day 1 S	MS	22092808-001 S	W	92544	197781	09/29/2022 08:45	09/29/2022 12:36
	Week 3 MW2 S	MS	22092829-011 S	W	92544	197781	09/29/2022 08:45	09/29/2022 13:55
	WSSC-Samp Pt FAC(B)-Day 1 SD	MSD	22092808-001 S	W	92544	197781	09/29/2022 08:45	09/29/2022 12:41
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22092809-001	W	92603	197883	10/03/2022 14:50	10/03/2022 22:10
	92603-1-BKS	BKS	92603-1-BKS	W	92603	197883	10/03/2022 14:50	10/03/2022 22:05
	92603-1-BLK	BLK	92603-1-BLK	W	92603	197883	10/03/2022 14:50	10/03/2022 22:00
	Effluent VSP-4 S	MS	22092809-001 S	W	92603	197883	10/03/2022 14:50	10/03/2022 22:15
	Effluent VSP-4 SD	MSD	22092809-001 S	W	92603	197883	10/03/2022 14:50	10/03/2022 22:20
EPA 624 .1	Effluent VSP-4	Initial	22092809-001	W	92587	197841	09/30/2022 08:34	09/30/2022 15:01
	92587-1-BKS	BKS	92587-1-BKS	W	92587	197841	09/30/2022 08:34	09/30/2022 09:55
	92587-1-BLK	BLK	92587-1-BLK	W	92587	197841	09/30/2022 08:34	09/30/2022 11:35
	Effluent VSP-4 S	MS	22092809-001 S	W	92587	197841	09/30/2022 08:34	09/30/2022 21:04
	Effluent VSP-4 SD	MSD	22092809-001 S	W	92587	197841	09/30/2022 08:34	09/30/2022 21:27
SM 2340B	Effluent VSP-4	Initial	22092809-001	W	92685	198011	09/29/2022 08:45	10/08/2022 21:36
SM 2540D -2015	Effluent VSP-4	Initial	22092809-001	W	197762	197762	09/28/2022 17:30	09/28/2022 17:30
	197762-1-BKS	BKS	197762-1-BKS	W	197762	197762	09/28/2022 17:30	09/28/2022 17:30
	197762-1-BLK	BLK	197762-1-BLK	W	197762	197762	09/28/2022 17:30	09/28/2022 17:30
	WSSC-Samp Pt FAC(B)-Day 1 D	MD	22092808-001 D	W	197762	197762	09/28/2022 17:30	09/28/2022 17:30
SM 5210B -2011	Effluent VSP-4	Initial	22092809-001	W	198018	198018	09/28/2022 17:00	10/03/2022 15:00

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092809

Analytical Method: SM 2540D -2015
Seq Number: 197762 Matrix: Water
MB Sample Id: 197762-1-BLK LCS Sample Id: 197762-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	101.4	100.3	99	86-110	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 197781 Matrix: Water Date Prep: 09/29/22
MB Sample Id: 92544-1-BLK LCS Sample Id: 92544-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	47.46	95	85-115	ug/L	
Lead	<1.000	50.00	46.29	93	85-115	ug/L	
Nickel	<1.000	50.00	45.83	92	85-115	ug/L	
Zinc	<20.00	100	86.21	86	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 197883 Matrix: Water Date Prep: 10/03/22
MB Sample Id: 92603-1-BLK LCS Sample Id: 92603-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	45.18	90	85-115	ug/L	
Lead	<1.000	50.00	44.18	88	85-115	ug/L	
Nickel	<1.000	50.00	44.34	89	85-115	ug/L	
Zinc	<20.00	100	89.35	89	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 197883 Matrix: Waste Water Date Prep: 10/03/22
Parent Sample Id: 22092809-001 MS Sample Id: 22092809-001 S MSD Sample Id: 22092809-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	<1.000	50.00	46.94	94	46.46	93	70-130	1	25	ug/L	
Lead	<1.000	50.00	50.16	100	49.57	99	70-130	1	25	ug/L	
Nickel	6.961	50.00	51.20	88	51.97	90	70-130	1	25	ug/L	
Zinc	21.44	100	116.5	95	116.2	95	70-130	0	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092809

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 197841
Matrix: Water
Date Prep: 09/30/22
MB Sample Id: 92587-1-BLK
LCS Sample Id: 92587-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	44.57	89	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	38.12	76	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	44.37	89	51-128	ug/L	
Chloromethane	<0.001000	50.00	37.87	76	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	43.30	87	5-195	ug/L	
Bromomethane	<0.001000	50.00	52.68	105	15-185	ug/L	
Chloroethane	<0.001000	50.00	38.50	77	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	48.24	96	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	43.19	86	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	50.81	102	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	50.12	100	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	54.28	109	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	44.46	89	70-130	ug/L	
Chloroform	0.1400	50.00	47.28	95	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.20	100	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	52.97	106	70-130	ug/L	
Benzene	<0.001000	50.00	49.39	99	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	42.64	85	70-130	ug/L	
Trichloroethene	<0.001000	50.00	52.71	105	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	45.22	90	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	49.75	100	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	47.78	96	25-175	ug/L	
Toluene	<0.001000	50.00	52.36	105	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	47.18	94	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	49.81	100	70-130	ug/L	
Tetrachloroethylene	0.07000	50.00	61.88	124	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	50.62	101	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	52.63	105	65-135	ug/L	
Ethylbenzene	0.03000	50.00	49.39	99	60-140	ug/L	
Bromoform	<0.001000	50.00	53.53	107	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	45.83	92	60-140	ug/L	
1,3-Dichlorobenzene	0.09000	50.00	53.48	107	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	52.82	106	65-135	ug/L	
1,2-Dichlorobenzene	<0.001000	50.00	53.42	107	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		101		94-108	%
4-Bromofluorobenzene	90		87		77-120	%
Toluene-D8	101		100		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092809

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 197841 Matrix: Waste Water Date Prep: 09/30/22
Parent Sample Id: 22092809-001 MS Sample Id: 22092809-001 S MSD Sample Id: 22092809-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	44.40	89	44.66	89	40-160	1	60	ug/L	
Acrylonitrile	<5.000	50.00	44.30	89	44.08	88	40-160	0	60	ug/L	
Dichlorodifluoromethane	<1.000	50.00	44.40	89	41.73	83	49-132	6	14	ug/L	
Chloromethane	<1.000	50.00	38.02	76	35.84	72	1-273	6	60	ug/L	
Vinyl Chloride	<1.000	50.00	42.53	85	39.19	78	1-251	8	66	ug/L	
Bromomethane	<1.000	50.00	55.39	111	52.09	104	1-242	6	61	ug/L	
Chloroethane	<1.000	50.00	39.86	80	37.86	76	14-230	5	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	50.70	101	47.81	96	17-181	6	84	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	35.06	70	34.17	68	1-305	3	71	ug/L	
1,1-Dichloroethene	<1.000	50.00	53.92	108	51.27	103	1-234	5	32	ug/L	
Methylene Chloride	<1.000	50.00	53.26	107	51.28	103	1-221	4	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	58.35	117	55.33	111	54-156	5	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.79	96	45.97	92	59-155	4	40	ug/L	
Chloroform	<1.000	50.00	51.02	102	48.87	98	51-138	4	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.90	108	51.33	103	52-162	5	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	56.01	112	53.50	107	70-140	5	41	ug/L	
Benzene	<1.000	50.00	53.55	107	51.61	103	37-151	4	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.44	91	44.44	89	49-155	2	49	ug/L	
Trichloroethene	<1.000	50.00	56.15	112	53.86	108	70-157	4	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.04	96	46.65	93	1-210	3	55	ug/L	
Bromodichloromethane	<1.000	50.00	52.18	104	50.35	101	35-155	4	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.93	98	47.30	95	1-227	3	58	ug/L	
Toluene	<1.000	50.00	55.79	112	53.41	107	47-150	4	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.72	95	46.35	93	17-183	3	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	54.16	108	52.56	105	52-150	3	45	ug/L	
Tetrachloroethylene	<1.000	50.00	64.92	130	61.33	123	64-148	6	39	ug/L	
Dibromochloromethane	<1.000	50.00	53.97	108	52.60	105	53-149	3	50	ug/L	
Chlorobenzene	<1.000	50.00	56.72	113	54.48	109	37-160	4	53	ug/L	
Ethylbenzene	<1.000	50.00	53.23	106	50.51	101	37-162	5	63	ug/L	
Bromoform	<1.000	50.00	56.55	113	55.85	112	45-169	1	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.44	101	50.78	102	46-157	1	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	56.89	114	54.77	110	156-123	4	43	ug/L	X
1,4-Dichlorobenzene	<1.000	50.00	55.98	112	54.13	108	18-190	3	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	57.27	115	55.66	111	18-190	3	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	102		102		94-108	%
4-Bromofluorobenzene	88		88		77-120	%
Toluene-D8	99		99		95-104	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092809

Analytical Method: EPA 200.8
Seq Number: 197781 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 09/29/22 13:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	100.8	101	85-115	ug/L	
Lead	100	99.14	99	85-115	ug/L	
Nickel	100	96.32	96	85-115	ug/L	
Zinc	200	191.5	96	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 197781 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 09/29/22 14:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	101.5	102	85-115	ug/L	
Lead	100	93.30	93	85-115	ug/L	
Nickel	100	98.41	98	85-115	ug/L	
Zinc	200	196.9	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 197781 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 09/29/22 14:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	102.8	103	85-115	ug/L	
Lead	100	99.95	100	85-115	ug/L	
Nickel	100	99.91	100	85-115	ug/L	
Zinc	200	212.5	106	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 197781 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 09/29/22 11:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	53.81	108	90-110	ug/L	
Lead	50.00	52.28	105	90-110	ug/L	
Nickel	50.00	51.20	102	90-110	ug/L	
Zinc	100	99.22	99	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 197883 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 10/03/22 21:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	97.93	98	85-115	ug/L	
Lead	100	96.06	96	85-115	ug/L	
Nickel	100	96.90	97	85-115	ug/L	
Zinc	200	196	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 197883 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 10/03/22 22:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	98.49	98	85-115	ug/L	
Lead	100	96.28	96	85-115	ug/L	
Nickel	100	96.11	96	85-115	ug/L	
Zinc	200	196	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 197883 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 10/03/22 23:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	98.72	99	85-115	ug/L	
Lead	100	96.55	97	85-115	ug/L	
Nickel	100	97.09	97	85-115	ug/L	
Zinc	200	196.8	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 197883 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/03/22 17:08

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	52.98	106	90-110	ug/L	
Lead	50.00	52.82	106	90-110	ug/L	
Nickel	50.00	52.14	104	90-110	ug/L	
Zinc	100	104.5	105	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092809

Analytical Method: EPA 624 .1

Seq Number: 196354 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05412	108	60-139	mg/L	
Acrylonitrile	0.05000	0.05601	112	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05421	108	54-148	mg/L	
Chloromethane	0.05000	0.05509	110	57-135	mg/L	
Vinyl Chloride	0.05000	0.05214	104	64-129	mg/L	
Bromomethane	0.05000	0.05621	112	67-132	mg/L	
Chloroethane	0.05000	0.05353	107	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05473	109	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.06209	124	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05540	111	67-126	mg/L	
Methylene Chloride	0.05000	0.05618	112	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05684	114	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05641	113	76-127	mg/L	
Chloroform	0.05000	0.05447	109	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05698	114	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05752	115	73-130	mg/L	
Benzene	0.05000	0.05625	113	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05450	109	77-129	mg/L	
Trichloroethene	0.05000	0.05637	113	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05729	115	74-129	mg/L	
Bromodichloromethane	0.05000	0.05761	115	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05582	112	76-116	mg/L	
Toluene	0.05000	0.05521	110	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05572	111	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05636	113	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05517	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05502	110	70-132	mg/L	
Chlorobenzene	0.05000	0.05607	112	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05478	110	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05948	119	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05753	115	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05733	115	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05838	117	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	102	85-147	%	
Toluene-D8	99	88-110	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): | DW CERT #:

PSS Work Order #: 22092809 | PAGE 1 OF 1

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② Preservatives Use Codes: 1,6 | 3 | 3 | 6 | 6

Analysis/Method Required ③: VOCs (624) | Dissolved metals (filtered) (200.8) | Total metals + Hardness (200.8) | TSS | BOD

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (624)	Dissolved metals (filtered) (200.8)	Total metals + Hardness (200.8)	TSS	BOD
1	Effluent VSP-4			WW	7	G	X	X	X	X	X

⑤

Relinquished By: (1)	Date: 9/28/22	Time: 1045	Received By:
Relinquished By: (2)	Date: 09/28/22	Time: 1155	Received By:
Relinquished By: (3)	Date:	Time:	Received By:
Relinquished By: (4)	Date:	Time:	Received By:

④

Requested TAT (One TAT per COC)

☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB = 0.8°C

Custody Seal: INTACT/COOLER

Coolers: 1 Temp: 0.7-1.4°C

Shipping Carrier: FTE

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22092809

Client Name WSP USA - Herndon
Disposal Date 11/02/2022

Received By Jillian Chapman
Date Received 09/28/2022 11:55:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	1.4
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Not Provided
COC agrees with sample labels?	Yes		N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

No sampling date or time on COC. Obtained from container labels.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 09/28/2022

PM Review and Approval: Amber Confer Date: 09/28/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092816

October 12, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22092816**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22092816**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 2, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22092816

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/28/2022 at 11:55 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22092816-001	Effluent VSP-4	WASTE WATER	09/28/22 07:30
22092816-002	Influent VSP-1	GROUND WATER	09/28/22 07:45
22092816-003	TB-092822	WATER	09/28/22 11:55

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092816

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2022 07:30** **PSS Sample ID: 22092816-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2022 11:55**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/08/22	10/08/22 19:33	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*101*	*%*	*80-120*		*1*	*10/08/22*	*10/08/22 19:33*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092816

Sample ID: Influent VSP-1 **Date/Time Sampled: 09/28/2022 07:45** **PSS Sample ID: 22092816-002**
Matrix: GROUND WATER **Date/Time Received: 09/28/2022 11:55**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 197903 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	10/04/22	10/04/22 19:46	1011
Benzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Bromochloromethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Bromodichloromethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Bromoform	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Bromomethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	10/04/22	10/04/22 19:46	1011
Carbon Disulfide	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Carbon tetrachloride	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Chlorobenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Chloroethane	**3.6**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Chloroform	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Chloromethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Cyclohexane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Dibromochloromethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,1-Dichloroethane	**47**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2-Dichloroethane	**1.3**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
cis-1,2-Dichloroethene	**1.4**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,1-Dichloroethene	**250**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Ethylbenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	10/04/22	10/04/22 19:46	1011
Isopropylbenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Methyl Acetate	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Methylcyclohexane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Methylene chloride	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092816

Sample ID: Influent VSP-1 **Date/Time Sampled: 09/28/2022 07:45** **PSS Sample ID: 22092816-002**
Matrix: GROUND WATER **Date/Time Received: 09/28/2022 11:55**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 197903 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	10/04/22	10/04/22 19:46	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Naphthalene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Styrene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Tetrachloroethene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Toluene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,1,1-Trichloroethane	**25**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Trichloroethene	**1.4**	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
Vinyl chloride	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011
m&p-Xylene	ND	ug/L	2.0		1	10/04/22	10/04/22 19:46	1011
o-Xylene	ND	ug/L	1.0		1	10/04/22	10/04/22 19:46	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*90*	*%*	*88-120*		*1*	*10/04/22*	*10/04/22 19:46*	*1011*
Dibromofluoromethane	*104*	*%*	*92-107*		*1*	*10/04/22*	*10/04/22 19:46*	*1011*
Toluene-D8	*100*	*%*	*95-106*		*1*	*10/04/22*	*10/04/22 19:46*	*1011*

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**150**	ug/L	10		10	10/08/22	10/08/22 19:56	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*102*	*%*	*80-120*		*10*	*10/08/22*	*10/08/22 19:56*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092816

Sample ID: TB-092822 **Date/Time Sampled: 09/28/2022 11:55** **PSS Sample ID: 22092816-003**
Matrix: WATER **Date/Time Received: 09/28/2022 11:55**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	09/30/22	09/30/22 16:09	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Acrylonitrile	ND	ug/L	5.0		1	09/30/22	09/30/22 16:09	1011
Chloromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Bromomethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Chloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Methylene Chloride	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Chloroform	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Benzene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Trichloroethene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Toluene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Chlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Ethylbenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
Bromoform	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/30/22	09/30/22 16:09	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22092816

Sample ID: TB-092822 **Date/Time Sampled: 09/28/2022 11:55** **PSS Sample ID: 22092816-003**
Matrix: WATER **Date/Time Received: 09/28/2022 11:55**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*102*	*%*	*94-108*	*1*	*09/30/22*	*09/30/22 16:09*	*1011*
4-Bromofluorobenzene	*89*	*%*	*77-120*	*1*	*09/30/22*	*09/30/22 16:09*	*1011*
Toluene-D8	*100*	*%*	*95-104*	*1*	*09/30/22*	*09/30/22 16:09*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/08/22	10/08/22 19:11	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*103*	*%*	*80-120*	*1*	*10/08/22*	*10/08/22 19:11*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22092816

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

No sampling date or time on COC for samples 001 and 002. Obtained from container labels.

Analytical:

TCL Volatile Organic Compounds

Batch: 197903

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Laboratory control sample (LCS) exceedances identified; see QC summary. Exceedances meet marginal exceedance criteria.

Method exceedance: Quality control sample surrogate exceedances identified, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22092816

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-092822	Initial	22092816-003	W	92587	197841	09/30/2022 08:34	09/30/2022 16:09
	92587-1-BKS	BKS	92587-1-BKS	W	92587	197841	09/30/2022 08:34	09/30/2022 09:55
	92587-1-BLK	BLK	92587-1-BLK	W	92587	197841	09/30/2022 08:34	09/30/2022 11:35
	Effluent VSP-4 S	MS	22092809-001 S	W	92587	197841	09/30/2022 08:34	09/30/2022 21:04
	Effluent VSP-4 SD	MSD	22092809-001 S	W	92587	197841	09/30/2022 08:34	09/30/2022 21:27
SW-846 8260 D	Influent VSP-1	Initial	22092816-002	W	92623	197903	10/04/2022 10:06	10/04/2022 19:46
	92623-1-BKS	BKS	92623-1-BKS	W	92623	197903	10/04/2022 10:06	10/04/2022 10:06
	92623-1-BLK	BLK	92623-1-BLK	W	92623	197903	10/04/2022 10:06	10/04/2022 11:26
	WS7FZZ S	MS	22093015-004 S	W	92623	197903	10/04/2022 10:06	10/04/2022 14:28
	WS7FZZ SD	MSD	22093015-004 S	W	92623	197903	10/04/2022 10:06	10/04/2022 14:50
SW-846 8260 D-SIM	Effluent VSP-4	Initial	22092816-001	W	92673	197998	10/08/2022 12:51	10/08/2022 19:33
	Influent VSP-1	Initial	22092816-002	W	92673	197998	10/08/2022 12:51	10/08/2022 19:56
	TB-092822	Initial	22092816-003	W	92673	197998	10/08/2022 12:51	10/08/2022 19:11
	92673-1-BKS	BKS	92673-1-BKS	W	92673	197998	10/08/2022 12:51	10/08/2022 17:42
	92673-1-BLK	BLK	92673-1-BLK	W	92673	197998	10/08/2022 12:51	10/08/2022 18:49
	92673-1-BSD	BSD	92673-1-BSD	W	92673	197998	10/08/2022 12:51	10/08/2022 18:04

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092816

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 197841
Matrix: Water
Date Prep: 09/30/22
MB Sample Id: 92587-1-BLK
LCS Sample Id: 92587-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	44.57	89	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	38.12	76	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	44.37	89	51-128	ug/L	
Chloromethane	<0.001000	50.00	37.87	76	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	43.30	87	5-195	ug/L	
Bromomethane	<0.001000	50.00	52.68	105	15-185	ug/L	
Chloroethane	<0.001000	50.00	38.50	77	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	48.24	96	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	43.19	86	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	50.81	102	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	50.12	100	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	54.28	109	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	44.46	89	70-130	ug/L	
Chloroform	0.1400	50.00	47.28	95	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.20	100	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	52.97	106	70-130	ug/L	
Benzene	<0.001000	50.00	49.39	99	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	42.64	85	70-130	ug/L	
Trichloroethene	<0.001000	50.00	52.71	105	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	45.22	90	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	49.75	100	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	47.78	96	25-175	ug/L	
Toluene	<0.001000	50.00	52.36	105	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	47.18	94	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	49.81	100	70-130	ug/L	
Tetrachloroethylene	0.07000	50.00	61.88	124	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	50.62	101	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	52.63	105	65-135	ug/L	
Ethylbenzene	0.03000	50.00	49.39	99	60-140	ug/L	
Bromoform	<0.001000	50.00	53.53	107	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	45.83	92	60-140	ug/L	
1,3-Dichlorobenzene	0.09000	50.00	53.48	107	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	52.82	106	65-135	ug/L	
1,2-Dichlorobenzene	<0.001000	50.00	53.42	107	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		101		94-108	%
4-Bromofluorobenzene	90		87		77-120	%
Toluene-D8	101		100		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092816

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 197903
Matrix: Water
Date Prep: 10/04/22
MB Sample Id: 92623-1-BLK
LCS Sample Id: 92623-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	49.27	99	49-154	ug/L	
Benzene	<1.000	50.00	49.46	99	76-112	ug/L	
Bromochloromethane	<1.000	50.00	59.55	119	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	49.51	99	78-117	ug/L	
Bromoform	<1.000	50.00	56.68	113	69-123	ug/L	
Bromomethane	<1.000	50.00	42.94	86	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	56.99	114	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	49.74	99	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	51.09	102	77-119	ug/L	
Chlorobenzene	<1.000	50.00	51.85	104	76-114	ug/L	
Chloroethane	<1.000	50.00	41.59	83	61-113	ug/L	
Chloroform	<1.000	50.00	47.09	94	75-113	ug/L	
Chloromethane	<1.000	50.00	38.18	76	41-148	ug/L	
Cyclohexane	<1.000	50.00	42.78	86	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	45.13	90	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	51.48	103	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	53.02	106	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.65	103	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.52	103	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	39.60	79	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.48	101	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	44.27	89	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	42.24	84	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	54.81	110	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	53.02	106	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.46	89	76-115	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.32	95	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	46.53	93	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	54.02	108	73-121	ug/L	
Ethylbenzene	<1.000	50.00	48.24	96	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	40.80	82	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	47.85	96	76-126	ug/L	
Methyl Acetate	<1.000	50.00	59.32	119	61-117	ug/L	H
Methylcyclohexane	<1.000	50.00	51.74	103	82-126	ug/L	
Methylene chloride	<1.000	50.00	52.21	104	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	45.04	90	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	50.53	101	71-114	ug/L	
Naphthalene	<1.000	50.00	51.27	103	60-122	ug/L	
Styrene	<1.000	50.00	52.19	104	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.94	94	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	60.04	120	76-123	ug/L	
Toluene	<1.000	50.00	51.90	104	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	51.17	102	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	50.93	102	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.92	98	79-118	ug/L	
Trichloroethene	<1.000	50.00	51.99	104	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	51.15	102	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.16	96	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	53.08	106	77-123	ug/L	
Vinyl chloride	<1.000	50.00	42.22	84	53-151	ug/L	
m&p-Xylene	<2.000	100	101.6	102	79-121	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092816

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 197903 Matrix: Water Date Prep: 10/04/22
MB Sample Id: 92623-1-BLK LCS Sample Id: 92623-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	51.24	102	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	88		85	*	88-120	%
Dibromofluoromethane	102		100		92-107	%
Toluene-D8	100		100		95-106	%

Analytical Method: SW-846 8260 D-SIM Prep Method: SW5030B
Seq Number: 197998 Matrix: Water Date Prep: 10/08/22
MB Sample Id: 92673-1-BLK LCS Sample Id: 92673-1-BKS LCSD Sample Id: 92673-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	30.67	102	29.10	97	50-150	5	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	106		99		98		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092816

Analytical Method: EPA 624 .1

Seq Number: 196354 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05412	108	60-139	mg/L	
Acrylonitrile	0.05000	0.05601	112	60-137	mg/L	
Dichlorodifluoromethane	0.05000	0.05421	108	54-148	mg/L	
Chloromethane	0.05000	0.05509	110	57-135	mg/L	
Vinyl Chloride	0.05000	0.05214	104	64-129	mg/L	
Bromomethane	0.05000	0.05621	112	67-132	mg/L	
Chloroethane	0.05000	0.05353	107	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05473	109	71-137	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.06209	124	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05540	111	67-126	mg/L	
Methylene Chloride	0.05000	0.05618	112	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05684	114	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05641	113	76-127	mg/L	
Chloroform	0.05000	0.05447	109	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05698	114	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05752	115	73-130	mg/L	
Benzene	0.05000	0.05625	113	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05450	109	77-129	mg/L	
Trichloroethene	0.05000	0.05637	113	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05729	115	74-129	mg/L	
Bromodichloromethane	0.05000	0.05761	115	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05582	112	76-116	mg/L	
Toluene	0.05000	0.05521	110	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05572	111	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05636	113	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05517	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05502	110	70-132	mg/L	
Chlorobenzene	0.05000	0.05607	112	72-128	mg/L	
Ethylbenzene	0.05000	0.05670	113	69-131	mg/L	
Bromoform	0.05000	0.05478	110	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05948	119	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05753	115	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05733	115	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05838	117	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	102	85-147	%	
Toluene-D8	99	88-110	%	

Analytical Method: SW-846 8260 D

Seq Number: 197903 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/04/22 10:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	49.27	99	80-120	ug/L	
Benzene	50.00	49.46	99	80-120	ug/L	
Bromochloromethane	50.00	59.55	119	80-120	ug/L	
Bromodichloromethane	50.00	49.51	99	80-120	ug/L	
Bromoform	50.00	56.68	113	80-120	ug/L	
Bromomethane	50.00	42.94	86	80-120	ug/L	
2-Butanone (MEK)	50.00	56.99	114	80-120	ug/L	
1,1-Dichloroethene	50.00	53.02	106	80-120	ug/L	
Carbon Disulfide	50.00	49.74	99	80-120	ug/L	
Carbon tetrachloride	50.00	51.09	102	80-120	ug/L	
Chlorobenzene	50.00	51.85	104	80-120	ug/L	
Chloroethane	50.00	41.59	83	80-120	ug/L	
Chloroform	50.00	47.09	94	80-120	ug/L	
Chloromethane	50.00	38.18	76	80-120	ug/L	X
Cyclohexane	50.00	42.78	86	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	45.13	90	80-120	ug/L	
Dibromochloromethane	50.00	51.48	103	80-120	ug/L	
1,2-Dibromoethane	50.00	53.02	106	80-120	ug/L	
1,2-Dichlorobenzene	50.00	51.65	103	80-120	ug/L	
1,3-Dichlorobenzene	50.00	51.52	103	80-120	ug/L	
Dichlorodifluoromethane	50.00	39.60	79	80-120	ug/L	X
1,4-Dichlorobenzene	50.00	50.48	101	80-120	ug/L	
1,1-Dichloroethane	50.00	44.27	89	80-120	ug/L	
1,2-Dichloroethane	50.00	42.24	84	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	54.81	110	80-120	ug/L	
1,2-Dichloropropane	50.00	44.46	89	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	47.32	95	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	46.53	93	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	54.02	108	80-120	ug/L	
Ethylbenzene	50.00	48.24	96	80-120	ug/L	
2-Hexanone (MBK)	50.00	40.80	82	80-120	ug/L	
Isopropylbenzene	50.00	47.85	96	80-120	ug/L	
Methyl Acetate	50.00	59.32	119	80-120	ug/L	
Methylcyclohexane	50.00	51.74	103	80-120	ug/L	
Methylene chloride	50.00	52.21	104	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	45.04	90	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	50.53	101	80-120	ug/L	
Naphthalene	50.00	51.27	103	80-120	ug/L	
Styrene	50.00	52.19	104	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	46.94	94	80-120	ug/L	
Tetrachloroethene	50.00	60.04	120	80-120	ug/L	
Toluene	50.00	51.90	104	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	51.17	102	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	50.93	102	80-120	ug/L	
1,1,1-Trichloroethane	50.00	48.92	98	80-120	ug/L	
Trichloroethene	50.00	51.99	104	80-120	ug/L	
1,1,2-Trichloroethane	50.00	51.15	102	80-120	ug/L	
Trichlorofluoromethane	50.00	48.16	96	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	53.08	106	80-120	ug/L	
Vinyl chloride	50.00	42.22	84	80-120	ug/L	
m&p-Xylene	100	101.6	102	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22092816

Analytical Method: SW-846 8260 D

Seq Number: 197903 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/04/22 10:06

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	51.24	102	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	85	80-120	%	
Dibromofluoromethane	100	80-120	%	
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 196353 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	54.16	108	70-130	ug/L	
Benzene	50.00	56.25	113	70-130	ug/L	
Bromochloromethane	50.00	56.97	114	70-130	ug/L	
Bromodichloromethane	50.00	57.61	115	70-130	ug/L	
Bromoform	50.00	54.78	110	70-130	ug/L	
Bromomethane	50.00	56.21	112	70-130	ug/L	
2-Butanone (MEK)	50.00	54.55	109	70-130	ug/L	
Carbon Disulfide	50.00	58.56	117	70-130	ug/L	
Carbon tetrachloride	50.00	57.52	115	70-130	ug/L	
Chlorobenzene	50.00	56.07	112	70-130	ug/L	
Chloroethane	50.00	53.53	107	70-130	ug/L	
Chloroform	50.00	54.47	109	70-130	ug/L	
Chloromethane	50.00	55.09	110	70-130	ug/L	
Cyclohexane	50.00	57.86	116	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	56.55	113	70-130	ug/L	
Dibromochloromethane	50.00	55.02	110	70-130	ug/L	
1,2-Dibromoethane	50.00	58.74	117	70-130	ug/L	
1,2-Dichlorobenzene	50.00	58.38	117	70-130	ug/L	
1,3-Dichlorobenzene	50.00	57.53	115	70-130	ug/L	
Dichlorodifluoromethane	50.00	54.21	108	70-130	ug/L	
1,4-Dichlorobenzene	50.00	57.33	115	70-130	ug/L	
1,1-Dichloroethane	50.00	56.41	113	70-130	ug/L	
1,2-Dichloroethane	50.00	54.50	109	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	57.31	115	70-130	ug/L	
1,1-Dichloroethene	50.00	55.40	111	70-130	ug/L	
1,2-Dichloropropane	50.00	57.29	115	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	55.82	112	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	55.72	111	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	56.84	114	70-130	ug/L	
Ethylbenzene	50.00	56.70	113	70-130	ug/L	
2-Hexanone (MBK)	50.00	56.67	113	70-130	ug/L	
Isopropylbenzene	50.00	59.62	119	70-130	ug/L	
Methyl Acetate	50.00	59.73	119	70-130	ug/L	
Methylcyclohexane	50.00	56.82	114	70-130	ug/L	
Methylene chloride	50.00	56.18	112	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	58.27	117	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	59.91	120	70-130	ug/L	
Naphthalene	50.00	58.87	118	70-130	ug/L	
Styrene	50.00	58.77	118	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	59.48	119	70-130	ug/L	
Tetrachloroethene	50.00	55.17	110	70-130	ug/L	
Toluene	50.00	55.21	110	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	58.23	116	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	57.72	115	70-130	ug/L	
1,1,1-Trichloroethane	50.00	56.98	114	70-130	ug/L	
Trichloroethene	50.00	56.37	113	70-130	ug/L	
1,1,2-Trichloroethane	50.00	56.36	113	70-130	ug/L	
Trichlorofluoromethane	50.00	54.73	109	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	55.17	110	70-130	ug/L	
Vinyl chloride	50.00	52.14	104	70-130	ug/L	
m&p-Xylene	100	112.6	113	70-130	ug/L	

Analytical Method: SW-846 8260 D

Seq Number: 196353 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	56.32	113	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	102	70-130	%	
Dibromofluoromethane	101	70-130	%	
Toluene-D8	99	70-130	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 197998 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/08/22 17:19

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.17	97	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	98	80-120	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 197998 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/08/22 16:57

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.66	96	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

CHAIN OF CUSTODY FORM

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All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31401545.010/04

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): | DW CERT #:

PSS Work Order #: 220928l6 | PAGE 1 OF 1

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1	1									Preservative Codes
							Analysis/ Method Required	1,4-dioxane (8260B SIM)	VOCs (8260)	VOCs (624)									1 - HCL 2 - H_2SO_4 3 - HNO_3 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit
1	Effluent VSP-4			WW	3	G		X											
2	Influent VSP-1			GW	6	G		X	X										Influent VSP-1
3	TB-092822			TB	4	—		X		X									Trip blank

⑤

Relinquished By: (1)	Date	Time	Received By:
	9/28/22	1045	
Relinquished By: (2)	Date	Time	Received By:
	09/28/22	1155	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB = 0.8°C

Custody Seal: INTACT - COOLER

Coolers: 1 Temp: 2.2-4.0°C

Shipping Carrier: TTE

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's and other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22092816

Client Name WSP USA - Herndon
Disposal Date 11/02/2022

Received By Jillian Chapman
Date Received 09/28/2022 11:55:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

Custody Seal(s) Intact?	Yes	Ice	Present
Seal(s) Signed / Dated?	Yes	Temp (deg C)	4.0
		Temp Blank Present	Yes

Documentation

COC agrees with sample labels?	Yes	Sampler Name	Not Provided
Chain of Custody	Yes		N/A

Sample Container

Appropriate for Specified Analysis?	Yes	Custody Seal(s) Intact?	Not Applicable
Intact?	Yes	Seal(s) Signed / Dated	Not Applicable
Labeled and Labels Legible?	Yes		

Holding Time

All Samples Received Within Holding Time(s)?	Yes	Total No. of Samples Received	3
		Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22092816

Client Name	WSP USA - Herndon	**Received By**	Jillian Chapman
Disposal Date	11/02/2022	**Date Received**	09/28/2022 11:55:00 AM
		Delivered By	Trans Time Express
		Tracking No	Not Applicable
		Logged In By	Jillian Chapman

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

No sampling date or time on COC for samples 001 and 002. Obtained from container labels.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 09/28/2022

PM Review and Approval: Amber Confer Date: 09/28/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102003

November 3, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22102003**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/02

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22102003**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 24, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22102003

Project ID: 31405608.010/02

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/20/2022 at 11:07 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22102003-001	Effluent VSP-4	WASTE WATER	10/20/22 09:40

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102003

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/20/2022 09:40** **PSS Sample ID: 22102003-001**
Matrix: WASTE WATER **Date/Time Received: 10/20/2022 11:07**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

Qualifier(s): See Batch 198443 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**6.7**	ug/L	1.0		1	10/24/22	10/26/22 17:23	1064
Lead	ND	ug/L	1.0		1	10/24/22	10/26/22 17:23	1064
Nickel	**21.1**	ug/L	1.00		1	10/24/22	10/26/22 17:23	1064
Zinc	**41.8**	ug/L	20.0		1	10/24/22	10/26/22 17:23	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**2.1**	ug/L	1.0		1	10/24/22	10/27/22 13:57	1064
Lead	ND	ug/L	1.0		1	10/24/22	10/26/22 18:20	1064
Nickel	**18.5**	ug/L	1.00		1	10/24/22	10/27/22 13:57	1064
Zinc	**28.1**	ug/L	20.0		1	10/24/22	10/26/22 18:20	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	10/21/22	10/21/22 10:52	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Acrylonitrile	ND	ug/L	5.0		1	10/21/22	10/21/22 10:52	1011
Chloromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Vinyl Chloride	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Bromomethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Chloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Methylene Chloride	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Chloroform	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Benzene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102003

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/20/2022 09:40** **PSS Sample ID: 22102003-001**
Matrix: WASTE WATER **Date/Time Received: 10/20/2022 11:07**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Bromodichloromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Toluene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Tetrachloroethylene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Dibromochloromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Chlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Ethylbenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
Bromoform	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 10:52	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*101*	*%*	*94-108*	*1*	*10/21/22*	*10/21/22 10:52*	*1011*
4-Bromofluorobenzene	*102*	*%*	*77-120*	*1*	*10/21/22*	*10/21/22 10:52*	*1011*
Toluene-D8	*103*	*%*	*95-104*	*1*	*10/21/22*	*10/21/22 10:52*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**23**	mg/L	0.66		1	10/27/22	10/27/22 13:39	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102003

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/20/2022 09:40** **PSS Sample ID: 22102003-001**
Matrix: WASTE WATER **Date/Time Received: 10/20/2022 11:07**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	2.1		1	10/24/22	10/24/22 17:10	1073

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

Start time: 21-Oct-22 11:05

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		10/21/22	10/26/22 12:40	4005

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Project Name: Kop-Flex

PSS Project No.: 22102003

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22102003: Analyses associated with analyst code 4005 were performed by
Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Total Metals

Batch: 198443

Method exceedance: Continuing calibration verification standard (CCV) exceedances identified; see QC summary.

Analytical:

Dissolved Metals

Batch: 198458

Method exceedance: Continuing calibration verification standard (CCV) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22102003

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22102003-001	W	92862	198443	10/24/2022 11:15	10/26/2022 17:23
	92862-1-BKS	BKS	92862-1-BKS	W	92862	198443	10/24/2022 11:15	10/26/2022 17:03
	92862-1-BLK	BLK	92862-1-BLK	W	92862	198443	10/24/2022 11:15	10/26/2022 16:58
	Greenbelt Day #2 - Comp S	MS	22102002-002 S	W	92862	198443	10/24/2022 11:15	10/26/2022 17:13
	Greenbelt Day #2 - Comp SD	MSD	22102002-002 S	W	92862	198443	10/24/2022 11:15	10/26/2022 17:18
	92862-1-BKS	Reanalysis	92862-1-BKS	W	92862	198457	10/24/2022 11:15	10/27/2022 12:53
	92862-1-BLK	Reanalysis	92862-1-BLK	W	92862	198457	10/24/2022 11:15	10/27/2022 12:48
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22102003-001	W	92867	198444	10/24/2022 15:32	10/26/2022 18:20
	92867-1-BKS	BKS	92867-1-BKS	W	92867	198444	10/24/2022 15:32	10/26/2022 18:15
	92867-1-BLK	BLK	92867-1-BLK	W	92867	198444	10/24/2022 15:32	10/26/2022 18:10
	Effluent VSP-4 S	MS	22102003-001 S	W	92867	198444	10/24/2022 15:32	10/26/2022 18:25
	Effluent VSP-4 SD	MSD	22102003-001 S	W	92867	198444	10/24/2022 15:32	10/26/2022 18:30
	92867-1-BKS	Reanalysis	92867-1-BKS	W	92867	198458	10/24/2022 15:32	10/27/2022 13:54
	92867-1-BLK	Reanalysis	92867-1-BLK	W	92867	198458	10/24/2022 15:32	10/27/2022 13:50
	Effluent VSP-4	Reanalysis	22102003-001	W	92867	198458	10/24/2022 15:32	10/27/2022 13:57
EPA 624 .1	Effluent VSP-4	Initial	22102003-001	W	92853	198342	10/21/2022 06:48	10/21/2022 10:52
	92853-1-BKS	BKS	92853-1-BKS	W	92853	198342	10/21/2022 06:48	10/21/2022 07:56
	92853-1-BLK	BLK	92853-1-BLK	W	92853	198342	10/21/2022 06:48	10/21/2022 09:58
	Effluent VSP-4 S	MS	22102003-001 S	W	92853	198342	10/21/2022 06:48	10/21/2022 15:01
	Effluent VSP-4 SD	MSD	22102003-001 S	W	92853	198342	10/21/2022 06:48	10/21/2022 15:24
SM 2340B	Effluent VSP-4	Initial	22102003-001	W	92862	198457	10/27/2022 14:37	10/27/2022 13:39
SM 2540D -2015	Effluent VSP-4	Initial	22102003-001	W	198375	198375	10/24/2022 17:10	10/24/2022 17:10
	198375-1-BKS	BKS	198375-1-BKS	W	198375	198375	10/24/2022 17:10	10/24/2022 17:10
	198375-1-BLK	BLK	198375-1-BLK	W	198375	198375	10/24/2022 17:10	10/24/2022 17:10
	Effluent VSP-4 D	MD	22102003-001 D	W	198375	198375	10/24/2022 17:10	10/24/2022 17:10
SM 5210B -2011	Effluent VSP-4	Initial	22102003-001	W	198605	198605	10/21/2022 11:05	10/26/2022 12:40

Analytical Method: SM 2540D -2015
Seq Number: 198375 Matrix: Water
MB Sample Id: 198375-1-BLK LCS Sample Id: 198375-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	101.4	97.50	96	86-110	mg/L	

Analytical Method: SM 2540D -2015
Seq Number: 198375 Matrix: Waste Water
Parent Sample Id: 22102003-001 MD Sample Id: 22102003-001 D

Parameter	Parent Result	MD Result	RPD	RPD Limit	Units	Flag
Suspended Solids	<2.105	<2.105	NC	19	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 198443 Matrix: Water Date Prep: 10/24/22
MB Sample Id: 92862-1-BLK LCS Sample Id: 92862-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	51.36	103	85-115	ug/L	
Lead	<1.000	50.00	52.72	105	85-115	ug/L	
Nickel	<1.000	50.00	50.49	101	85-115	ug/L	
Zinc	<20.00	100	93.53	94	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 198444 Matrix: Water Date Prep: 10/24/22
MB Sample Id: 92867-1-BLK LCS Sample Id: 92867-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	52.75	106	85-115	ug/L	
Lead	<1.000	50.00	51.46	103	85-115	ug/L	
Zinc	<20.00	100	98.99	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 198458 Matrix: Water Date Prep: 10/24/22
MB Sample Id: 92867-1-BLK LCS Sample Id: 92867-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	1.093	50.00	52.41	105	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102003

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP

Seq Number: 198444 Matrix: Waste Water Date Prep: 10/24/22

Parent Sample Id: 22102003-001 MS Sample Id: 22102003-001 S MSD Sample Id: 22102003-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	2.166	50.00	52.30	100	51.77	99	70-130	1	25	ug/L	
Lead	<1.000	50.00	48.23	96	48.71	97	70-130	1	25	ug/L	
Nickel	18.22	50.00	66.96	97	66.59	97	70-130	1	25	ug/L	
Zinc	28.06	100	129.9	102	130.3	102	70-130	0	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102003

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 198342
Matrix: Water
Date Prep: 10/21/22
MB Sample Id: 92853-1-BLK
LCS Sample Id: 92853-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	48.45	97	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	46.26	93	60-140	ug/L	
Dichlorodifluoromethane	0.05000	50.00	38.53	77	51-128	ug/L	
Chloromethane	0.1200	50.00	41.50	83	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	43.94	88	5-195	ug/L	
Bromomethane	<0.001000	50.00	45.53	91	15-185	ug/L	
Chloroethane	<0.001000	50.00	44.51	89	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	47.09	94	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	45.78	92	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	47.92	96	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	44.49	89	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	45.96	92	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	45.71	91	70-130	ug/L	
Chloroform	<0.001000	50.00	45.24	90	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	49.19	98	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	50.46	101	70-130	ug/L	
Benzene	0.03000	50.00	47.57	95	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	46.03	92	70-130	ug/L	
Trichloroethene	0.08000	50.00	48.00	96	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	47.61	95	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	49.24	98	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	51.13	102	25-175	ug/L	
Toluene	0.04000	50.00	47.49	95	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.35	97	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	48.36	97	70-130	ug/L	
Tetrachloroethylene	0.1200	50.00	49.19	98	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	50.13	100	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	47.79	96	65-135	ug/L	
Ethylbenzene	0.05000	50.00	48.95	98	60-140	ug/L	
Bromoform	<0.001000	50.00	49.75	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	52.30	105	60-140	ug/L	
1,3-Dichlorobenzene	0.1600	50.00	49.66	99	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	49.01	98	65-135	ug/L	
1,2-Dichlorobenzene	0.1000	50.00	50.43	101	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		100		94-108	%
4-Bromofluorobenzene	101		98		77-120	%
Toluene-D8	100		99		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102003

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 198342 Matrix: Waste Water Date Prep: 10/21/22
Parent Sample Id: 22102003-001 MS Sample Id: 22102003-001 S MSD Sample Id: 22102003-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	46.99	94	47.22	94	40-160	0	60	ug/L	
Acrylonitrile	<5.000	50.00	48.46	97	49.34	99	40-160	2	60	ug/L	
Dichlorodifluoromethane	<1.000	50.00	31.91	64	28.78	58	49-132	10	14	ug/L	
Chloromethane	<1.000	50.00	44.50	89	40.23	80	1-273	10	60	ug/L	
Vinyl Chloride	<1.000	50.00	45.39	91	40.68	81	1-251	11	66	ug/L	
Bromomethane	<1.000	50.00	50.39	101	46.15	92	1-242	9	61	ug/L	
Chloroethane	<1.000	50.00	48.91	98	44.42	89	14-230	10	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.09	94	44.65	89	17-181	5	84	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	34.39	69	36.94	74	1-305	7	71	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.21	100	47.24	94	1-234	6	32	ug/L	
Methylene Chloride	<1.000	50.00	49.16	98	49.94	100	1-221	2	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.68	99	49.04	98	54-156	1	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.68	95	49.86	100	59-155	4	40	ug/L	
Chloroform	<1.000	50.00	48.76	98	45.21	90	51-138	8	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.26	103	48.34	97	52-162	6	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.16	106	49.26	99	70-140	8	41	ug/L	
Benzene	<1.000	50.00	49.29	99	46.04	92	37-151	7	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.46	99	46.44	93	49-155	6	49	ug/L	
Trichloroethene	<1.000	50.00	49.73	99	46.64	93	70-157	6	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	49.41	99	47.14	94	1-210	5	55	ug/L	
Bromodichloromethane	<1.000	50.00	52.51	105	49.73	99	35-155	5	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.44	105	50.19	100	1-227	4	58	ug/L	
Toluene	<1.000	50.00	52.04	104	47.39	95	47-150	9	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	49.22	98	47.47	95	17-183	4	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.05	100	48.18	96	52-150	4	45	ug/L	
Tetrachloroethylene	<1.000	50.00	52.43	105	47.76	96	64-148	9	39	ug/L	
Dibromochloromethane	<1.000	50.00	52.17	104	50.84	102	53-149	3	50	ug/L	
Chlorobenzene	<1.000	50.00	51.16	102	47.85	96	37-160	7	53	ug/L	
Ethylbenzene	<1.000	50.00	53.00	106	49.02	98	37-162	8	63	ug/L	
Bromoform	<1.000	50.00	49.24	98	48.96	98	45-169	1	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	44.97	90	43.22	86	46-157	4	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.37	105	46.32	93	59-156	12	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.70	103	47.72	95	18-190	8	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.64	105	47.08	94	18-190	11	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	103		103		94-108	%
4-Bromofluorobenzene	94		92		77-120	%
Toluene-D8	103		102		95-104	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102003

Analytical Method: EPA 200.8
Seq Number: 198443 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/26/22 17:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	115.6	116	85-115	ug/L	X
Lead	100	111.8	112	85-115	ug/L	
Nickel	100	112.6	113	85-115	ug/L	
Zinc	200	214.3	107	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 198443 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 10/26/22 18:53

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	100.7	101	85-115	ug/L	
Lead	100	115.1	115	85-115	ug/L	
Nickel	100	98.97	99	85-115	ug/L	
Zinc	200	196.1	98	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 198457 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/27/22 13:29

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	115.1	115	85-115	ug/L	
Silver	10.00	11.05	111	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 198443 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/26/22 16:35

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.74	101	90-110	ug/L	
Lead	50.00	52.90	106	90-110	ug/L	
Nickel	50.00	49.51	99	90-110	ug/L	
Zinc	100	93.24	93	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 198457 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/27/22 12:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	48.06	96	90-110	ug/L	
Nickel	50.00	47.80	96	90-110	ug/L	
Silver	5.000	4.839	97	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 198444 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/26/22 17:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	111.8	112	85-115	ug/L	
Zinc	200	214.3	107	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 198444 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 10/26/22 18:53

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	115.1	115	85-115	ug/L	
Zinc	200	196.1	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 198444 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 10/26/22 19:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	113.4	113	85-115	ug/L	
Zinc	200	186	93	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 198458 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 10/27/22 13:29

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	115.1	115	85-115	ug/L	
Nickel	100	116.4	116	85-115	ug/L	X

Analytical Method: EPA 200.8 Dissolved
Seq Number: 198458 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 10/27/22 14:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	113	113	85-115	ug/L	
Nickel	100	114.7	115	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 198444 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/26/22 16:35

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	52.90	106	90-110	ug/L	
Zinc	100	93.24	93	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 198458 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/27/22 12:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	48.06	96	90-110	ug/L	
Nickel	50.00	47.80	96	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102003

Analytical Method: EPA 624 .1

Seq Number: 198304 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/20/22 15:13

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05031	101	33-138	mg/L	
Acrylonitrile	0.05000	0.05561	111	59-124	mg/L	
Dichlorodifluoromethane	0.05000	0.04366	87	51-128	mg/L	
Chloromethane	0.05000	0.05153	103	24-139	mg/L	
Vinyl Chloride	0.05000	0.04912	98	30-148	mg/L	
Bromomethane	0.05000	0.05003	100	41-121	mg/L	
Chloroethane	0.05000	0.04903	98	61-109	mg/L	
Trichlorofluoromethane	0.05000	0.04798	96	70-114	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.04596	92	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05190	104	73-112	mg/L	
Methylene Chloride	0.05000	0.05258	105	75-115	mg/L	
trans-1,2-dichloroethene	0.05000	0.05355	107	76-116	mg/L	
1,1-Dichloroethane	0.05000	0.05119	102	67-115	mg/L	
Chloroform	0.05000	0.04826	97	71-110	mg/L	
1,1,1-Trichloroethane	0.05000	0.05102	102	76-113	mg/L	
Carbon Tetrachloride	0.05000	0.05148	103	81-114	mg/L	
Benzene	0.05000	0.04896	98	74-114	mg/L	
1,2-Dichloroethane	0.05000	0.04978	100	64-112	mg/L	
Trichloroethene	0.05000	0.04929	99	78-115	mg/L	
1,2-Dichloropropane	0.05000	0.05029	101	69-115	mg/L	
Bromodichloromethane	0.05000	0.05155	103	79-114	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05283	106	84-114	mg/L	
Toluene	0.05000	0.05015	100	78-115	mg/L	
trans-1,3-dichloropropene	0.05000	0.04922	98	81-115	mg/L	
1,1,2-Trichloroethane	0.05000	0.04907	98	78-116	mg/L	
Tetrachloroethylene	0.05000	0.04970	99	74-129	mg/L	
Dibromochloromethane	0.05000	0.05061	101	80-133	mg/L	
Chlorobenzene	0.05000	0.04851	97	78-117	mg/L	
Ethylbenzene	0.05000	0.05065	101	79-116	mg/L	
Bromoform	0.05000	0.04703	94	72-138	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.04523	90	65-126	mg/L	
1,3-Dichlorobenzene	0.05000	0.04802	96	77-123	mg/L	
1,4-Dichlorobenzene	0.05000	0.04813	96	76-122	mg/L	
1,2-Dichlorobenzene	0.05000	0.04832	97	75-126	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	103	94-108	%	
4-Bromofluorobenzene	97	77-120	%	
Toluene-D8	102	95-104	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22102003 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kap-Flex | PROJECT #: 31405608.010/02

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservatives Use Codes: 1,6 | 3 | 3 | 6 | 6

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required: VOCs (624)	Dissolved metals (200.8, Filtered)	Total metals (5+ hardness (200.8))	TSS	BOD							
1	Effluent VSP-4	10/20/22	0940	WW	7	G	X	X	X	X	X							

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	10/20/22	1005	Dan Carter
Relinquished By: (2)	Date	Time	Received By:
Dan Carter	10/20/22	1107	[illegible]
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)

☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER _____

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 0.8°C

Custody Seal: PRES/COOLER

Coolers: 1 Temp: 0.3-1.2°C

Shipping Carrier: TTE

Special Instructions:
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered
Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22102003

Client Name WSP USA - Herndon
Disposal Date 11/24/2022

Received By Jillian Chapman
Date Received 10/20/2022 11:07:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	1.2
Seal(s) Signed / Dated?	N/A	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 10/20/2022

PM Review and Approval: Amber Confer Date: 10/20/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102004

November 3, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22102004**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/02

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22102004**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 24, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22102004

Project ID: 31405608.010/02

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/20/2022 at 11:07 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22102004-001	Effluent VSP-4	WASTE WATER	10/20/22 09:40
22102004-002	TB-102022	WATER	10/20/22 11:07

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102004

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/20/2022 09:40** **PSS Sample ID: 22102004-001**
Matrix: WASTE WATER **Date/Time Received: 10/20/2022 11:07**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**2.9**	ug/L	1.0		1	10/31/22	10/31/22 17:18	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*101*	*%*	*80-120*		*1*	*10/31/22*	*10/31/22 17:18*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102004

Sample ID: TB-102022 **Date/Time Sampled: 10/20/2022 11:07** **PSS Sample ID: 22102004-002**
Matrix: WATER **Date/Time Received: 10/20/2022 11:07**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	10/21/22	10/21/22 11:14	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Acrylonitrile	ND	ug/L	5.0		1	10/21/22	10/21/22 11:14	1011
Chloromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Vinyl Chloride	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Bromomethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Chloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Methylene Chloride	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Chloroform	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Benzene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Trichloroethene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Bromodichloromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Toluene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Tetrachloroethylene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Dibromochloromethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Chlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Ethylbenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
Bromoform	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	10/21/22	10/21/22 11:14	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22102004

Sample ID: TB-102022 **Date/Time Sampled: 10/20/2022 11:07** **PSS Sample ID: 22102004-002**
Matrix: WATER **Date/Time Received: 10/20/2022 11:07**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*103*	*%*	*94-108*	*1*	*10/21/22*	*10/21/22 11:14*	*1011*
4-Bromofluorobenzene	*100*	*%*	*77-120*	*1*	*10/21/22*	*10/21/22 11:14*	*1011*
Toluene-D8	*103*	*%*	*95-104*	*1*	*10/21/22*	*10/21/22 11:14*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/31/22	10/31/22 17:40	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*96*	*%*	*80-120*	*1*	*10/31/22*	*10/31/22 17:40*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22102004

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22102004

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-102022	Initial	22102004-002	W	92853	198342	10/21/2022 06:48	10/21/2022 11:14
	92853-1-BKS	BKS	92853-1-BKS	W	92853	198342	10/21/2022 06:48	10/21/2022 07:56
	92853-1-BLK	BLK	92853-1-BLK	W	92853	198342	10/21/2022 06:48	10/21/2022 09:58
	Effluent VSP-4 S	MS	22102003-001 S	W	92853	198342	10/21/2022 06:48	10/21/2022 15:01
	Effluent VSP-4 SD	MSD	22102003-001 S	W	92853	198342	10/21/2022 06:48	10/21/2022 15:24
SW-846 8260 D-SIM	Effluent VSP-4	Initial	22102004-001	W	92959	198570	10/31/2022 15:17	10/31/2022 17:18
	TB-102022	Initial	22102004-002	W	92959	198570	10/31/2022 15:17	10/31/2022 17:40
	92959-1-BKS	BKS	92959-1-BKS	W	92959	198570	10/31/2022 15:17	10/31/2022 15:49
	92959-1-BLK	BLK	92959-1-BLK	W	92959	198570	10/31/2022 15:17	10/31/2022 16:55
	92959-1-BSD	BSD	92959-1-BSD	W	92959	198570	10/31/2022 15:17	10/31/2022 16:11

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102004

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 198342
Matrix: Water
Date Prep: 10/21/22
MB Sample Id: 92853-1-BLK
LCS Sample Id: 92853-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	48.45	97	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	46.26	93	60-140	ug/L	
Dichlorodifluoromethane	0.05000	50.00	38.53	77	51-128	ug/L	
Chloromethane	0.1200	50.00	41.50	83	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	43.94	88	5-195	ug/L	
Bromomethane	<0.001000	50.00	45.53	91	15-185	ug/L	
Chloroethane	<0.001000	50.00	44.51	89	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	47.09	94	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	45.78	92	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	47.92	96	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	44.49	89	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	45.96	92	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	45.71	91	70-130	ug/L	
Chloroform	<0.001000	50.00	45.24	90	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	49.19	98	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	50.46	101	70-130	ug/L	
Benzene	0.03000	50.00	47.57	95	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	46.03	92	70-130	ug/L	
Trichloroethene	0.08000	50.00	48.00	96	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	47.61	95	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	49.24	98	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	51.13	102	25-175	ug/L	
Toluene	0.04000	50.00	47.49	95	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.35	97	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	48.36	97	70-130	ug/L	
Tetrachloroethylene	0.1200	50.00	49.19	98	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	50.13	100	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	47.79	96	65-135	ug/L	
Ethylbenzene	0.05000	50.00	48.95	98	60-140	ug/L	
Bromoform	<0.001000	50.00	49.75	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	52.30	105	60-140	ug/L	
1,3-Dichlorobenzene	0.1600	50.00	49.66	99	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	49.01	98	65-135	ug/L	
1,2-Dichlorobenzene	0.1000	50.00	50.43	101	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	100		100		94-108	%
4-Bromofluorobenzene	101		98		77-120	%
Toluene-D8	100		99		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102004

Analytical Method: SW-846 8260 D-SIM Prep Method: SW5030B
Seq Number: 198570 Matrix: Water Date Prep: 10/31/22
MB Sample Id: 92959-1-BLK LCS Sample Id: 92959-1-BKS LCSD Sample Id: 92959-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	30.26	101	32.47	108	50-150	7	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	101		102		102		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22102004

Analytical Method: EPA 624 .1

Seq Number: 198304 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/20/22 15:13

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05031	101	33-138	mg/L	
Acrylonitrile	0.05000	0.05561	111	59-124	mg/L	
Dichlorodifluoromethane	0.05000	0.04366	87	51-128	mg/L	
Chloromethane	0.05000	0.05153	103	24-139	mg/L	
Vinyl Chloride	0.05000	0.04912	98	30-148	mg/L	
Bromomethane	0.05000	0.05003	100	41-121	mg/L	
Chloroethane	0.05000	0.04903	98	61-109	mg/L	
Trichlorofluoromethane	0.05000	0.04798	96	70-114	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.04596	92	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05190	104	73-112	mg/L	
Methylene Chloride	0.05000	0.05258	105	75-115	mg/L	
trans-1,2-dichloroethene	0.05000	0.05355	107	76-116	mg/L	
1,1-Dichloroethane	0.05000	0.05119	102	67-115	mg/L	
Chloroform	0.05000	0.04826	97	71-110	mg/L	
1,1,1-Trichloroethane	0.05000	0.05102	102	76-113	mg/L	
Carbon Tetrachloride	0.05000	0.05148	103	81-114	mg/L	
Benzene	0.05000	0.04896	98	74-114	mg/L	
1,2-Dichloroethane	0.05000	0.04978	100	64-112	mg/L	
Trichloroethene	0.05000	0.04929	99	78-115	mg/L	
1,2-Dichloropropane	0.05000	0.05029	101	69-115	mg/L	
Bromodichloromethane	0.05000	0.05155	103	79-114	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05283	106	84-114	mg/L	
Toluene	0.05000	0.05015	100	78-115	mg/L	
trans-1,3-dichloropropene	0.05000	0.04922	98	81-115	mg/L	
1,1,2-Trichloroethane	0.05000	0.04907	98	78-116	mg/L	
Tetrachloroethylene	0.05000	0.04970	99	74-129	mg/L	
Dibromochloromethane	0.05000	0.05061	101	80-133	mg/L	
Chlorobenzene	0.05000	0.04851	97	78-117	mg/L	
Ethylbenzene	0.05000	0.05065	101	79-116	mg/L	
Bromoform	0.05000	0.04703	94	72-138	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.04523	90	65-126	mg/L	
1,3-Dichlorobenzene	0.05000	0.04802	96	77-123	mg/L	
1,4-Dichlorobenzene	0.05000	0.04813	96	76-122	mg/L	
1,2-Dichlorobenzene	0.05000	0.04832	97	75-126	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	103	94-108	%	
4-Bromofluorobenzene	97	77-120	%	
Toluene-D8	102	95-104	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 197998 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/08/22 17:19

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.17	97	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	98	80-120	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 198570 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/31/22 15:17

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.72	96	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	97	80-120	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 197998 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/08/22 16:57

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.66	96	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

CHAIN OF CUSTODY FORM

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All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31405608.010/02

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

PSS Work Order #: 22102004 | PAGE 1 OF 1

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes											Analysis/ Method Required ③
							1,4-dioxane (8260 SIM)	VOCs (8260)										
1	Effluent VSP-4	10/20/22	0940	WW	3	G	X											
2	TB-102022	—	—	TB	4	—	X	X										VOCs by 624

⑤

Relinquished By: (1)	Date	Time	Received By:
Sean Burke	10/20/22	1005	Dan Porter
Relinquished By: (2)	Date	Time	Received By:
Dan Porter	10/20/22	1107	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER _____

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 0.8°C

Custody Seal: PRES/COOLER

Coolers: 1 Temp: 0.3-1.2°C

Shipping Carrier: TTE

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22102004

Client Name WSP USA - Herndon
Disposal Date 11/24/2022

Received By Jillian Chapman
Date Received 10/20/2022 11:07:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	1.2
Seal(s) Signed / Dated?	N/A	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 10/20/2022

PM Review and Approval: Amber Confer Date: 10/20/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110906

November 23, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22110906**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/02.02

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22110906**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 14, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22110906

Project ID: 31405608.010/02.02

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/09/2022 at 11:25 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22110906-001	Effluent VSP-4	WASTE WATER	11/09/22 09:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110906

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/09/2022 09:30** **PSS Sample ID: 22110906-001**
Matrix: WASTE WATER **Date/Time Received: 11/09/2022 11:25**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**9.5**	ug/L	1.0		1	11/10/22	11/10/22 23:54	1064
Lead	ND	ug/L	1.0		1	11/10/22	11/10/22 23:54	1064
Nickel	**20.4**	ug/L	1.00		1	11/10/22	11/10/22 23:54	1064
Zinc	**41.8**	ug/L	20.0		1	11/10/22	11/10/22 23:54	1064

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

Qualifier(s): See Batch 199137 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**6.0**	ug/L	1.0		1	11/18/22	11/19/22 01:04	1064
Lead	ND	ug/L	1.0		1	11/18/22	11/21/22 19:32	1064
Nickel	**17.3**	ug/L	1.00		1	11/18/22	11/19/22 01:04	1064
Zinc	**40.1**	ug/L	20.0		1	11/18/22	11/19/22 01:04	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	11/10/22	11/11/22 00:18	1011
Acrylonitrile	ND	ug/L	5.0		1	11/10/22	11/11/22 00:18	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Chloromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Bromomethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Chloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Methylene Chloride	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Chloroform	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Benzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110906

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/09/2022 09:30** **PSS Sample ID: 22110906-001**
Matrix: WASTE WATER **Date/Time Received: 11/09/2022 11:25**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Toluene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Tetrachloroethylene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Chlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Ethylbenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
Bromoform	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:18	1011

Surrogate(s)	***Recovery***		***Limits***			
Dibromofluoromethane	*103*	*%*	*94-108*	*1*	*11/10/22*	*11/11/22 00:18*	*1011*
4-Bromofluorobenzene	*106*	*%*	*77-120*	*1*	*11/10/22*	*11/11/22 00:18*	*1011*
Toluene-D8	*101*	*%*	*95-104*	*1*	*11/10/22*	*11/11/22 00:18*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**21**	mg/L	0.66		1	11/10/22	11/17/22 20:39	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110906

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/09/2022 09:30** **PSS Sample ID: 22110906-001**
Matrix: WASTE WATER **Date/Time Received: 11/09/2022 11:25**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	11/10/22	11/10/22 18:15	1073

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	2.0		11/09/22	11/09/22 15:08	4009

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Project Name: Kop-Flex

PSS Project No.: 22110906

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Sample(s) received at 0 degrees but no samples were frozen.

22110906: Analyses associated with analyst code 4009 were performed by
Martel Laboratories, Inc., 1025 Cromwell Bridge Road, Towson, MD 21204

Analytical:

Dissolved Metals

Batch: 199137

Matrix spike/matrix spike duplicate (MS/MSD) and/or Relative Percent Difference (RPD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22110906

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22110906-001	W	93086	198914	11/10/2022 09:59	11/10/2022 23:54
	93086-1-BKS	BKS	93086-1-BKS	W	93086	198914	11/10/2022 09:59	11/10/2022 23:49
	93086-1-BLK	BLK	93086-1-BLK	W	93086	198914	11/10/2022 09:59	11/10/2022 23:44
	Effluent VSP-4 S	MS	22110906-001 S	W	93086	198914	11/10/2022 09:59	11/10/2022 23:58
	Effluent VSP-4 SD	MSD	22110906-001 S	W	93086	198914	11/10/2022 09:59	11/11/2022 00:03
EPA 200.8 Dissolved	Effluent VSP-4	Initial	22110906-001	W	93222	199137	11/18/2022 18:40	11/19/2022 01:04
	93222-1-BKS	BKS	93222-1-BKS	W	93222	199137	11/18/2022 18:40	11/19/2022 00:59
	93222-1-BLK	BLK	93222-1-BLK	W	93222	199137	11/18/2022 18:40	11/19/2022 00:54
	Effluent VSP-4 S	MS	22110906-001 S	W	93222	199137	11/18/2022 18:40	11/19/2022 01:09
	B-21D-11172022 S	MS	22111728-005 S	W	93222	199137	11/18/2022 18:40	11/19/2022 03:01
	Effluent VSP-4 SD	MSD	22110906-001 S	W	93222	199137	11/18/2022 18:40	11/19/2022 01:14
	93222-1-BKS	Reanalysis	93222-1-BKS	W	93222	199166	11/18/2022 18:40	11/21/2022 19:27
	93222-1-BLK	Reanalysis	93222-1-BLK	W	93222	199166	11/18/2022 18:40	11/21/2022 19:22
	Effluent VSP-4	Reanalysis	22110906-001	W	93222	199166	11/18/2022 18:40	11/21/2022 19:32
EPA 624 .1	Effluent VSP-4	Initial	22110906-001	W	93101	198872	11/10/2022 20:31	11/11/2022 00:18
	93101-1-BKS	BKS	93101-1-BKS	W	93101	198872	11/10/2022 20:31	11/10/2022 20:53
	93101-1-BLK	BLK	93101-1-BLK	W	93101	198872	11/10/2022 20:31	11/10/2022 22:24
	Startup Discharge - 110822 S	MS	22110911-001 S	W	93101	198872	11/10/2022 20:31	11/11/2022 01:03
	Startup Discharge - 110822 SD	MSD	22110911-001 S	W	93101	198872	11/10/2022 20:31	11/11/2022 01:26
SM 2340B	Effluent VSP-4	Initial	22110906-001	W	93216	199089	11/10/2022 09:45	11/17/2022 20:39
SM 2540D -2015	Effluent VSP-4	Initial	22110906-001	W	198876	198876	11/10/2022 18:15	11/10/2022 18:15
	198876-1-BKS	BKS	198876-1-BKS	W	198876	198876	11/10/2022 18:15	11/10/2022 18:15
	198876-1-BLK	BLK	198876-1-BLK	W	198876	198876	11/10/2022 18:15	11/10/2022 18:15
	221107-Plymouth Dis. D	MD	22110810-001 D	W	198876	198876	11/10/2022 18:15	11/10/2022 18:15
	Pond #1 D	MD	22111003-001 D	W	198876	198876	11/10/2022 18:15	11/10/2022 18:15
SM 5210B -2011	Effluent VSP-4	Initial	22110906-001	W	199107	199107	11/09/2022 15:08	11/09/2022 15:08

Analytical Method: SM 2540D -2015
Seq Number: 198876 Matrix: Water
MB Sample Id: 198876-1-BLK LCS Sample Id: 198876-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	101	96.00	95	86-110	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 198914 Matrix: Water Date Prep: 11/10/22
MB Sample Id: 93086-1-BLK LCS Sample Id: 93086-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	44.54	89	85-115	ug/L	
Lead	<1.000	50.00	45.39	91	85-115	ug/L	
Nickel	<1.000	50.00	44.33	89	85-115	ug/L	
Zinc	<20.00	100	89.12	89	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 198914 Matrix: Waste Water Date Prep: 11/10/22
Parent Sample Id: 22110906-001 MS Sample Id: 22110906-001 S MSD Sample Id: 22110906-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	9.469	50.00	59.41	100	58.80	99	70-130	1	25	ug/L	
Lead	<1.000	50.00	48.14	96	45.03	90	70-130	7	25	ug/L	
Nickel	20.42	50.00	61.73	83	62.51	84	70-130	1	25	ug/L	
Zinc	41.84	100	125.2	83	129.1	87	70-130	3	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 199137 Matrix: Water Date Prep: 11/18/22
MB Sample Id: 93222-1-BLK LCS Sample Id: 93222-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	47.08	94	85-115	ug/L	
Nickel	<1.000	50.00	46.46	93	85-115	ug/L	
Zinc	<20.00	100	97.11	97	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 199166 Matrix: Water Date Prep: 11/18/22
MB Sample Id: 93222-1-BLK LCS Sample Id: 93222-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	50.00	46.74	93	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110906

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 199137 Matrix: Waste Water Date Prep: 11/18/22
Parent Sample Id: 22110906-001 MS Sample Id: 22110906-001 S MSD Sample Id: 22110906-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	5.986	50.00	52.57	93	52.23	92	70-130	1	25	ug/L	
Lead	<1.000	50.00	141.7	283	142.3	285	70-130	0	25	ug/L	X
Nickel	17.32	50.00	62.63	91	62.73	91	70-130	0	25	ug/L	
Zinc	40.14	100	134.3	94	135.2	95	70-130	1	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110906

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 198872
Matrix: Water
Date Prep: 11/10/22
MB Sample Id: 93101-1-BLK
LCS Sample Id: 93101-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	51.34	103	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	48.78	98	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	51.39	103	51-128	ug/L	
Chloromethane	<0.001000	50.00	51.97	104	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	52.95	106	5-195	ug/L	
Bromomethane	<0.001000	50.00	53.49	107	15-185	ug/L	
Chloroethane	<0.001000	50.00	50.83	102	40-160	ug/L	
Trichlorofluoromethane	0.03000	50.00	52.21	104	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	39.85	80	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	51.81	104	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	47.64	95	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	47.49	95	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	48.71	97	70-130	ug/L	
Chloroform	<0.001000	50.00	49.79	100	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.51	101	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	52.43	105	70-130	ug/L	
Benzene	<0.001000	50.00	51.18	102	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	54.08	108	70-130	ug/L	
Trichloroethene	<0.001000	50.00	52.23	104	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	51.62	103	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	53.83	108	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	49.12	98	25-175	ug/L	
Toluene	0.03000	50.00	48.84	98	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.38	97	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	53.79	108	70-130	ug/L	
Tetrachloroethylene	0.07000	50.00	50.62	101	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	51.62	103	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	50.32	101	65-135	ug/L	
Ethylbenzene	0.03000	50.00	53.48	107	60-140	ug/L	
Bromoform	<0.001000	50.00	49.68	99	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	45.69	91	60-140	ug/L	
1,3-Dichlorobenzene	0.1200	50.00	47.16	94	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	46.50	93	65-135	ug/L	
1,2-Dichlorobenzene	0.09000	50.00	48.16	96	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	90	*	101		94-108	%
4-Bromofluorobenzene	108		96		77-120	%
Toluene-D8	99		99		95-104	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 198914 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 11/10/22 23:26

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	93.73	94	85-115	ug/L	
Lead	100	95.37	95	85-115	ug/L	
Nickel	100	93.48	93	85-115	ug/L	
Zinc	200	186.5	93	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 198914 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 11/11/22 00:26

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	92.45	92	85-115	ug/L	
Lead	100	111.7	112	85-115	ug/L	
Nickel	100	92.09	92	85-115	ug/L	
Zinc	200	184.1	92	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 198914 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/10/22 20:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.51	99	90-110	ug/L	
Lead	50.00	50.41	101	90-110	ug/L	
Nickel	50.00	48.48	97	90-110	ug/L	
Zinc	100	96.32	96	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199137 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 11/19/22 00:34

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	96.82	97	85-115	ug/L	
Nickel	100	95.83	96	85-115	ug/L	
Zinc	200	197.5	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199137 Matrix: Water
CCV Sample Id: CCV 7 Analyzed Date: 11/19/22 01:39

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	96.42	96	85-115	ug/L	
Nickel	100	95.54	96	85-115	ug/L	
Zinc	200	198.9	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199137 Matrix: Water
CCV Sample Id: CCV 8 Analyzed Date: 11/19/22 02:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	96.20	96	85-115	ug/L	
Nickel	100	94.93	95	85-115	ug/L	
Zinc	200	198.6	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199137 Matrix: Water
CCV Sample Id: CCV 9 Analyzed Date: 11/19/22 03:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	95.93	96	85-115	ug/L	
Nickel	100	94.34	94	85-115	ug/L	
Zinc	200	196.7	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199137 Matrix: Water
CCV Sample Id: CCV 10 Analyzed Date: 11/19/22 04:20

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	97.16	97	85-115	ug/L	
Nickel	100	95.23	95	85-115	ug/L	
Zinc	200	197.9	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199166 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 11/21/22 19:47

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	96.32	96	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199166 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 11/21/22 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	92.24	92	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199166 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 11/21/22 22:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	109.2	109	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199166 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 11/21/22 23:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	100.3	100	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199166 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 11/22/22 00:14

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	106.3	106	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199166 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 11/22/22 01:20

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	88.02	88	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110906

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199137 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/18/22 18:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.13	98	90-110	ug/L	
Nickel	50.00	47.89	96	90-110	ug/L	
Zinc	100	96.47	96	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199166 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/21/22 18:15

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	45.24	90	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110906

Analytical Method: EPA 624 .1

Seq Number: 198856 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/10/22 08:02

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.04992	100	33-138	mg/L	
Acrylonitrile	0.05000	0.04879	98	59-124	mg/L	
Dichlorodifluoromethane	0.05000	0.05247	105	51-128	mg/L	
Chloromethane	0.05000	0.05169	103	24-139	mg/L	
Vinyl Chloride	0.05000	0.04810	96	30-148	mg/L	
Bromomethane	0.05000	0.05899	118	41-121	mg/L	
Chloroethane	0.05000	0.05197	104	61-109	mg/L	
Trichlorofluoromethane	0.05000	0.05087	102	70-114	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.04970	99	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05071	101	73-112	mg/L	
Methylene Chloride	0.05000	0.04883	98	75-115	mg/L	
trans-1,2-dichloroethene	0.05000	0.05114	102	76-116	mg/L	
1,1-Dichloroethane	0.05000	0.05183	104	67-115	mg/L	
Chloroform	0.05000	0.04864	97	71-110	mg/L	
1,1,1-Trichloroethane	0.05000	0.05068	101	76-113	mg/L	
Carbon Tetrachloride	0.05000	0.05242	105	81-114	mg/L	
Benzene	0.05000	0.05025	101	74-114	mg/L	
1,2-Dichloroethane	0.05000	0.04938	99	64-112	mg/L	
Trichloroethene	0.05000	0.05380	108	78-115	mg/L	
1,2-Dichloropropane	0.05000	0.05547	111	69-115	mg/L	
Bromodichloromethane	0.05000	0.05481	110	79-114	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05303	106	84-114	mg/L	
Toluene	0.05000	0.05239	105	78-115	mg/L	
trans-1,3-dichloropropene	0.05000	0.05268	105	81-115	mg/L	
1,1,2-Trichloroethane	0.05000	0.05220	104	78-116	mg/L	
Tetrachloroethylene	0.05000	0.04900	98	74-129	mg/L	
Dibromochloromethane	0.05000	0.05231	105	80-133	mg/L	
Chlorobenzene	0.05000	0.05410	108	78-117	mg/L	
Ethylbenzene	0.05000	0.05653	113	79-116	mg/L	
Bromoform	0.05000	0.05312	106	72-138	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05366	107	65-126	mg/L	
1,3-Dichlorobenzene	0.05000	0.05508	110	77-123	mg/L	
1,4-Dichlorobenzene	0.05000	0.05260	105	76-122	mg/L	
1,2-Dichlorobenzene	0.05000	0.05549	111	75-126	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	94-108	%	X
4-Bromofluorobenzene	100	77-120	%	
Toluene-D8	96	95-104	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22110906 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31405608.010/02.02

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② Preservatives Use Codes: 1,6 | 3 | 3 | 6 | 6

Analysis/Method Required ③: VOCs (624) | Total metals + hardness (200.8) | Dissolved metals (200.8) | TSS | BOD

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8)	TSS	BOD
1	Effluent VSP-4	11/9/22	0930	WW	7	G	X	X	X	X	X

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	11/9/22	1010	Dan Carlo
(2) Dan Carlo	11/09/22	1125	
(3)			
(4)			

④ Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB = 0.5°C

Custody Seal: INTACT/COOLER

Coolers: 1 Temp: 0-2.3°C

Shipping Carrier: TTE NOT FROZEN

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22110906

Client Name WSP USA - Herndon
Disposal Date 12/14/2022

Received By Jillian Chapman
Date Received 11/09/2022 11:25:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.3
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Sample(s) received at 0 degrees but no samples were frozen.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 11/09/2022

PM Review and Approval: Amber Confer Date: 11/09/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110907

November 23, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22110907**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/02.02

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22110907**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 14, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

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800-932-9047
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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22110907

Project ID: 31405608.010/02.02

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/09/2022 at 11:25 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22110907-001	Effluent VSP-4	WASTE WATER	11/09/22 09:30
22110907-002	Influent VSP-1	GROUND WATER	11/09/22 09:40
22110907-003	TB-110922	WATER	11/09/22 11:25

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110907

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/09/2022 09:30** **PSS Sample ID: 22110907-001**
Matrix: WASTE WATER **Date/Time Received: 11/09/2022 11:25**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**3.4**	ug/L	1.0		1	11/23/22	11/23/22 11:36	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*100*	*%*	*80-120*		*1*	*11/23/22*	*11/23/22 11:36*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110907

Sample ID: Influent VSP-1 **Date/Time Sampled: 11/09/2022 09:40** **PSS Sample ID: 22110907-002**
Matrix: GROUND WATER **Date/Time Received: 11/09/2022 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 199094 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	11/18/22	11/18/22 21:39	1011
Benzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Bromochloromethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Bromoform	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Bromomethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	11/18/22	11/18/22 21:39	1011
Carbon Disulfide	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Carbon tetrachloride	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Chlorobenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Chloroethane	**5.2**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Chloroform	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Chloromethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Cyclohexane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,1-Dichloroethane	**54**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2-Dichloroethane	**1.7**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
cis-1,2-Dichloroethene	**1.7**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,1-Dichloroethene	**230**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Ethylbenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	11/18/22	11/18/22 21:39	1011
Isopropylbenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Methyl Acetate	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Methylcyclohexane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Methylene chloride	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110907

Sample ID: Influent VSP-1 **Date/Time Sampled: 11/09/2022 09:40** **PSS Sample ID: 22110907-002**
Matrix: GROUND WATER **Date/Time Received: 11/09/2022 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 199094 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	11/18/22	11/18/22 21:39	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Naphthalene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Styrene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Tetrachloroethene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Toluene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,1,1-Trichloroethane	**22**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Trichloroethene	**1.3**	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
Vinyl chloride	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011
m&p-Xylene	ND	ug/L	2.0		1	11/18/22	11/18/22 21:39	1011
o-Xylene	ND	ug/L	1.0		1	11/18/22	11/18/22 21:39	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*110*	*%*	*88-120*		*1*	*11/18/22*	*11/18/22 21:39*	*1011*
Dibromofluoromethane	*104*	*%*	*92-107*		*1*	*11/18/22*	*11/18/22 21:39*	*1011*
Toluene-D8	*98*	*%*	*95-106*		*1*	*11/18/22*	*11/18/22 21:39*	*1011*

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**120**	ug/L	10		10	11/23/22	11/23/22 12:20	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*97*	*%*	*80-120*		*10*	*11/23/22*	*11/23/22 12:20*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110907

Sample ID: TB-110922 **Date/Time Sampled: 11/09/2022 11:25** **PSS Sample ID: 22110907-003**
Matrix: WATER **Date/Time Received: 11/09/2022 11:25**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	11/10/22	11/11/22 00:40	1011
Acrylonitrile	ND	ug/L	5.0		1	11/10/22	11/11/22 00:40	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Chloromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Bromomethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Chloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Methylene Chloride	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Chloroform	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Benzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Trichloroethene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Toluene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Tetrachloroethylene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Chlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Ethylbenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
Bromoform	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/10/22	11/11/22 00:40	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22110907

Sample ID: TB-110922 **Date/Time Sampled: 11/09/2022 11:25** **PSS Sample ID: 22110907-003**
Matrix: WATER **Date/Time Received: 11/09/2022 11:25**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

pH=2

Surrogate(s)	*Recovery*		*Limits*				
Dibromofluoromethane	*97*	*%*	*94-108*	*1*	*11/10/22*	*11/11/22 00:40*	*1011*
4-Bromofluorobenzene	*106*	*%*	*77-120*	*1*	*11/10/22*	*11/11/22 00:40*	*1011*
Toluene-D8	*100*	*%*	*95-104*	*1*	*11/10/22*	*11/11/22 00:40*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	11/23/22	11/23/22 11:58	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*101*	*%*	*80-120*	*1*	*11/23/22*	*11/23/22 11:58*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22110907

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Sample(s) received at 0 degrees but no samples were frozen.

Analytical:

TCL Volatiles plus Oxygenates

Batch: 199094

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22110907

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-110922	Initial	22110907-003	W	93101	198872	11/10/2022 20:31	11/11/2022 00:40
	93101-1-BKS	BKS	93101-1-BKS	W	93101	198872	11/10/2022 20:31	11/10/2022 20:53
	93101-1-BLK	BLK	93101-1-BLK	W	93101	198872	11/10/2022 20:31	11/10/2022 22:24
	Startup Discharge - 110822 S	MS	22110911-001 S	W	93101	198872	11/10/2022 20:31	11/11/2022 01:03
	Startup Discharge - 110822 SD	MSD	22110911-001 S	W	93101	198872	11/10/2022 20:31	11/11/2022 01:26
SW-846 8260 D	Influent VSP-1	Initial	22110907-002	W	93219	199094	11/18/2022 10:13	11/18/2022 21:39
	93219-1-BKS	BKS	93219-1-BKS	W	93219	199094	11/18/2022 10:13	11/18/2022 10:13
	93219-1-BLK	BLK	93219-1-BLK	W	93219	199094	11/18/2022 10:13	11/18/2022 11:51
	TW01-111622 S	MS	22111801-001 S	W	93219	199094	11/18/2022 10:13	11/18/2022 16:44
	TW01-111622 SD	MSD	22111801-001 S	W	93219	199094	11/18/2022 10:13	11/18/2022 17:06
SW-846 8260 D-SIM	Effluent VSP-4	Initial	22110907-001	W	93277	199215	11/23/2022 09:11	11/23/2022 11:36
	Influent VSP-1	Initial	22110907-002	W	93277	199215	11/23/2022 09:11	11/23/2022 12:20
	TB-110922	Initial	22110907-003	W	93277	199215	11/23/2022 09:11	11/23/2022 11:58
	93277-1-BKS	BKS	93277-1-BKS	W	93277	199215	11/23/2022 09:11	11/23/2022 09:45
	93277-1-BLK	BLK	93277-1-BLK	W	93277	199215	11/23/2022 09:11	11/23/2022 11:07
	93277-1-BSD	BSD	93277-1-BSD	W	93277	199215	11/23/2022 09:11	11/23/2022 10:07

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 198872
Matrix: Water
Date Prep: 11/10/22
MB Sample Id: 93101-1-BLK
LCS Sample Id: 93101-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	51.34	103	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	48.78	98	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	51.39	103	51-128	ug/L	
Chloromethane	<0.001000	50.00	51.97	104	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	52.95	106	5-195	ug/L	
Bromomethane	<0.001000	50.00	53.49	107	15-185	ug/L	
Chloroethane	<0.001000	50.00	50.83	102	40-160	ug/L	
Trichlorofluoromethane	0.03000	50.00	52.21	104	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	39.85	80	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	51.81	104	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	47.64	95	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	47.49	95	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	48.71	97	70-130	ug/L	
Chloroform	<0.001000	50.00	49.79	100	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.51	101	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	52.43	105	70-130	ug/L	
Benzene	<0.001000	50.00	51.18	102	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	54.08	108	70-130	ug/L	
Trichloroethene	<0.001000	50.00	52.23	104	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	51.62	103	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	53.83	108	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	49.12	98	25-175	ug/L	
Toluene	0.03000	50.00	48.84	98	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.38	97	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	53.79	108	70-130	ug/L	
Tetrachloroethylene	0.07000	50.00	50.62	101	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	51.62	103	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	50.32	101	65-135	ug/L	
Ethylbenzene	0.03000	50.00	53.48	107	60-140	ug/L	
Bromoform	<0.001000	50.00	49.68	99	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	45.69	91	60-140	ug/L	
1,3-Dichlorobenzene	0.1200	50.00	47.16	94	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	46.50	93	65-135	ug/L	
1,2-Dichlorobenzene	0.09000	50.00	48.16	96	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	90	*	101		94-108	%
4-Bromofluorobenzene	108		96		77-120	%
Toluene-D8	99		99		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 199094
Matrix: Water
Date Prep: 11/18/22
MB Sample Id: 93219-1-BLK
LCS Sample Id: 93219-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	39.23	78	49-154	ug/L	
Benzene	<1.000	50.00	47.36	95	76-112	ug/L	
Bromochloromethane	<1.000	50.00	47.85	96	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	50.18	100	78-117	ug/L	
Bromoform	<1.000	50.00	54.77	110	69-123	ug/L	
Bromomethane	<1.000	50.00	45.15	90	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	42.67	85	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	45.53	91	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	49.29	99	77-119	ug/L	
Chlorobenzene	<1.000	50.00	48.49	97	76-114	ug/L	
Chloroethane	<1.000	50.00	43.89	88	61-113	ug/L	
Chloroform	<1.000	50.00	49.19	98	75-113	ug/L	
Chloromethane	<1.000	50.00	43.59	87	41-148	ug/L	
Cyclohexane	<1.000	50.00	46.95	94	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	50.51	101	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	53.70	107	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	50.42	101	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.10	98	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.21	98	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	45.91	92	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.10	98	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.14	96	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.19	100	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	47.25	95	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	43.84	88	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.13	96	76-115	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.63	97	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	50.20	100	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	45.62	91	73-121	ug/L	
Ethylbenzene	<1.000	50.00	47.76	96	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	46.62	93	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	46.64	93	76-126	ug/L	
Methyl Acetate	<1.000	50.00	43.72	87	61-117	ug/L	
Methylcyclohexane	<1.000	50.00	47.92	96	82-126	ug/L	
Methylene chloride	<1.000	50.00	46.43	93	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	46.97	94	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	44.79	90	71-114	ug/L	
Naphthalene	<1.000	50.00	47.87	96	60-122	ug/L	
Styrene	<1.000	50.00	48.87	98	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.57	97	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	48.56	97	76-123	ug/L	
Toluene	<1.000	50.00	46.33	93	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	48.91	98	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	49.98	100	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.81	96	79-118	ug/L	
Trichloroethene	<1.000	50.00	48.10	96	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.88	98	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.64	97	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	48.41	97	77-123	ug/L	
Vinyl chloride	<1.000	50.00	52.96	106	53-151	ug/L	
m&p-Xylene	<2.000	100	95.08	95	79-121	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 199094
Matrix: Water
Date Prep: 11/18/22
MB Sample Id: 93219-1-BLK
LCS Sample Id: 93219-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	48.04	96	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	108		98		88-120	%
Dibromofluoromethane	102		105		92-107	%
Toluene-D8	99		99		95-106	%

Analytical Method: SW-846 8260 D-SIM
Prep Method: SW5030B
Seq Number: 199215
Matrix: Water
Date Prep: 11/23/22
MB Sample Id: 93277-1-BLK
LCS Sample Id: 93277-1-BKS
LCSD Sample Id: 93277-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	28.21	94	28.50	95	50-150	1	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		97		99		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: EPA 624 .1

Seq Number: 198856 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/10/22 08:02

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.04992	100	33-138	mg/L	
Acrylonitrile	0.05000	0.04879	98	59-124	mg/L	
Dichlorodifluoromethane	0.05000	0.05247	105	51-128	mg/L	
Chloromethane	0.05000	0.05169	103	24-139	mg/L	
Vinyl Chloride	0.05000	0.04810	96	30-148	mg/L	
Bromomethane	0.05000	0.05899	118	41-121	mg/L	
Chloroethane	0.05000	0.05197	104	61-109	mg/L	
Trichlorofluoromethane	0.05000	0.05087	102	70-114	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.04970	99	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05071	101	73-112	mg/L	
Methylene Chloride	0.05000	0.04883	98	75-115	mg/L	
trans-1,2-dichloroethene	0.05000	0.05114	102	76-116	mg/L	
1,1-Dichloroethane	0.05000	0.05183	104	67-115	mg/L	
Chloroform	0.05000	0.04864	97	71-110	mg/L	
1,1,1-Trichloroethane	0.05000	0.05068	101	76-113	mg/L	
Carbon Tetrachloride	0.05000	0.05242	105	81-114	mg/L	
Benzene	0.05000	0.05025	101	74-114	mg/L	
1,2-Dichloroethane	0.05000	0.04938	99	64-112	mg/L	
Trichloroethene	0.05000	0.05380	108	78-115	mg/L	
1,2-Dichloropropane	0.05000	0.05547	111	69-115	mg/L	
Bromodichloromethane	0.05000	0.05481	110	79-114	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05303	106	84-114	mg/L	
Toluene	0.05000	0.05239	105	78-115	mg/L	
trans-1,3-dichloropropene	0.05000	0.05268	105	81-115	mg/L	
1,1,2-Trichloroethane	0.05000	0.05220	104	78-116	mg/L	
Tetrachloroethylene	0.05000	0.04900	98	74-129	mg/L	
Dibromochloromethane	0.05000	0.05231	105	80-133	mg/L	
Chlorobenzene	0.05000	0.05410	108	78-117	mg/L	
Ethylbenzene	0.05000	0.05653	113	79-116	mg/L	
Bromoform	0.05000	0.05312	106	72-138	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05366	107	65-126	mg/L	
1,3-Dichlorobenzene	0.05000	0.05508	110	77-123	mg/L	
1,4-Dichlorobenzene	0.05000	0.05260	105	76-122	mg/L	
1,2-Dichlorobenzene	0.05000	0.05549	111	75-126	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	93	94-108	%	X
4-Bromofluorobenzene	100	77-120	%	
Toluene-D8	96	95-104	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: SW-846 8260 D

Seq Number: 199094 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 11/18/22 10:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	39.23	78	80-120	ug/L	X
Benzene	50.00	47.36	95	80-120	ug/L	
Bromochloromethane	50.00	47.85	96	80-120	ug/L	
Bromodichloromethane	50.00	50.18	100	80-120	ug/L	
Bromoform	50.00	54.77	110	80-120	ug/L	
Bromomethane	50.00	45.15	90	80-120	ug/L	
2-Butanone (MEK)	50.00	42.67	85	80-120	ug/L	
Carbon Disulfide	50.00	45.53	91	80-120	ug/L	
Carbon tetrachloride	50.00	49.29	99	80-120	ug/L	
Chlorobenzene	50.00	48.49	97	80-120	ug/L	
Chloroethane	50.00	43.89	88	80-120	ug/L	
Chloroform	50.00	49.19	98	80-120	ug/L	
Chloromethane	50.00	43.59	87	80-120	ug/L	
Cyclohexane	50.00	46.95	94	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	50.51	101	80-120	ug/L	
Dibromochloromethane	50.00	53.70	107	80-120	ug/L	
1,2-Dibromoethane	50.00	50.42	101	80-120	ug/L	
1,2-Dichlorobenzene	50.00	49.10	98	80-120	ug/L	
1,3-Dichlorobenzene	50.00	49.21	98	80-120	ug/L	
Dichlorodifluoromethane	50.00	45.91	92	80-120	ug/L	
1,4-Dichlorobenzene	50.00	49.10	98	80-120	ug/L	
1,1-Dichloroethane	50.00	48.14	96	80-120	ug/L	
1,2-Dichloroethane	50.00	50.19	100	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	47.25	95	80-120	ug/L	
1,1-Dichloroethene	50.00	43.84	88	80-120	ug/L	
1,2-Dichloropropane	50.00	48.13	96	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	48.63	97	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	50.20	100	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	45.62	91	80-120	ug/L	
Ethylbenzene	50.00	47.76	96	80-120	ug/L	
2-Hexanone (MBK)	50.00	46.62	93	80-120	ug/L	
Isopropylbenzene	50.00	46.64	93	80-120	ug/L	
Methyl Acetate	50.00	43.72	87	80-120	ug/L	
Methylcyclohexane	50.00	47.92	96	80-120	ug/L	
Methylene chloride	50.00	46.43	93	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	46.97	94	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	44.79	90	80-120	ug/L	
Naphthalene	50.00	47.87	96	80-120	ug/L	
Styrene	50.00	48.87	98	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	48.57	97	80-120	ug/L	
Tetrachloroethene	50.00	48.56	97	80-120	ug/L	
Toluene	50.00	46.33	93	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	48.91	98	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	49.98	100	80-120	ug/L	
1,1,1-Trichloroethane	50.00	47.81	96	80-120	ug/L	
Trichloroethene	50.00	48.10	96	80-120	ug/L	
1,1,2-Trichloroethane	50.00	48.88	98	80-120	ug/L	
Trichlorofluoromethane	50.00	48.64	97	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	48.41	97	80-120	ug/L	
Vinyl chloride	50.00	52.96	106	80-120	ug/L	
m&p-Xylene	100	95.08	95	80-120	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: SW-846 8260 D

Seq Number: 199094 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 11/18/22 10:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	48.04	96	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	80-120	%	
Dibromofluoromethane	105	80-120	%	
Toluene-D8	99	80-120	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22110907

Analytical Method: SW-846 8260 D

Seq Number: 199024 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/16/22 20:03

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	49.77	100	70-130	ug/L	
Benzene	50.00	52.15	104	70-130	ug/L	
Bromochloromethane	50.00	52.54	105	70-130	ug/L	
Bromodichloromethane	50.00	52.69	105	70-130	ug/L	
Bromoform	50.00	58.05	116	70-130	ug/L	
Bromomethane	50.00	50.25	101	70-130	ug/L	
2-Butanone (MEK)	50.00	53.00	106	70-130	ug/L	
Carbon Disulfide	50.00	53.47	107	70-130	ug/L	
Carbon tetrachloride	50.00	53.28	107	70-130	ug/L	
Chlorobenzene	50.00	52.62	105	70-130	ug/L	
Chloroethane	50.00	49.90	100	70-130	ug/L	
Chloroform	50.00	51.46	103	70-130	ug/L	
Chloromethane	50.00	46.94	94	70-130	ug/L	
Cyclohexane	50.00	52.08	104	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	60.02	120	70-130	ug/L	
Dibromochloromethane	50.00	56.37	113	70-130	ug/L	
1,2-Dibromoethane	50.00	54.63	109	70-130	ug/L	
1,2-Dichlorobenzene	50.00	53.70	107	70-130	ug/L	
1,3-Dichlorobenzene	50.00	53.30	107	70-130	ug/L	
Dichlorodifluoromethane	50.00	49.35	99	70-130	ug/L	
1,4-Dichlorobenzene	50.00	53.25	107	70-130	ug/L	
1,1-Dichloroethane	50.00	51.82	104	70-130	ug/L	
1,2-Dichloroethane	50.00	50.95	102	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	52.54	105	70-130	ug/L	
1,1-Dichloroethene	50.00	51.49	103	70-130	ug/L	
1,2-Dichloropropane	50.00	51.68	103	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	53.21	106	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	54.18	108	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	51.90	104	70-130	ug/L	
Ethylbenzene	50.00	51.42	103	70-130	ug/L	
2-Hexanone (MBK)	50.00	53.63	107	70-130	ug/L	
Isopropylbenzene	50.00	51.42	103	70-130	ug/L	
Methyl Acetate	50.00	53.16	106	70-130	ug/L	
Methylcyclohexane	50.00	51.82	104	70-130	ug/L	
Methylene chloride	50.00	51.25	103	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.23	106	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	52.05	104	70-130	ug/L	
Naphthalene	50.00	57.10	114	70-130	ug/L	
Styrene	50.00	53.12	106	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	53.25	107	70-130	ug/L	
Tetrachloroethene	50.00	52.78	106	70-130	ug/L	
Toluene	50.00	51.19	102	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	56.64	113	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	55.65	111	70-130	ug/L	
1,1,1-Trichloroethane	50.00	51.88	104	70-130	ug/L	
Trichloroethene	50.00	52.77	106	70-130	ug/L	
1,1,2-Trichloroethane	50.00	51.92	104	70-130	ug/L	
Trichlorofluoromethane	50.00	52.81	106	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	52.88	106	70-130	ug/L	
Vinyl chloride	50.00	47.15	94	70-130	ug/L	
m&p-Xylene	100	104.7	105	70-130	ug/L	

Analytical Method: SW-846 8260 D

Seq Number: 199024 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/16/22 20:03

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	52.29	105	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	70-130	%	
Dibromofluoromethane	101	70-130	%	
Toluene-D8	99	70-130	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 197998 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 10/08/22 17:19

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.17	97	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	98	80-120	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 199215 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 11/23/22 09:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.46	95	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D-SIM

Seq Number: 197998 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/08/22 16:57

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.66	96	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22110907 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-flex | PROJECT #: 31405608.010/02.02

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1	1	1									
							Analysis/ Method Required		1,4-dioxane (8260B SIM)	VOCs (8260)	VOCs (624)									
1	Effluent VSP-4	11/9/22	0930	WW	3	G			X											
2	Influent VSP-1	11/9/22	0940	GW	6	G			X	X										
3	TB-110922	—	—	TB	4	—			X		X									

⑤

Relinquished By: (1)	Date	Time	Received By:
Shannon Burke	11/9/22	1010	Dan Carter
Relinquished By: (2)	Date	Time	Received By:
Dan Carter	11/09/22	1125	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB-0.5°C

Custody Seal: INTACT/COOLER

Coolers: 1 Temp: 0-2.3°C

Shipping Carrier: FTE NOT FROZEN

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22110907

Client Name WSP USA - Herndon
Disposal Date 12/14/2022

Received By Jillian Chapman
Date Received 11/09/2022 11:25:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	2.3
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		No
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Sample(s) received at 0 degrees but no samples were frozen.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 11/09/2022

PM Review and Approval: Amber Confer Date: 11/09/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22113014

December 5, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22113014**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/02.02

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22113014**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 4, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22113014

Project ID: 31405608.010/02.02

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/30/2022 at 02:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22113014-001	Effluent VSP-4	WASTE WATER	11/30/22 13:40

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22113014

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/30/2022 13:40** **PSS Sample ID: 22113014-001**
Matrix: WASTE WATER **Date/Time Received: 11/30/2022 14:30**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**3.4**	ug/L	1.0		1	12/01/22	12/02/22 18:47	1064

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Project Name: Kop-Flex

PSS Project No.: 22113014

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22113014

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22113014-001	W	93337	199408	12/01/2022 11:00	12/02/2022 18:47
	93337-1-BKS	BKS	93337-1-BKS	W	93337	199408	12/01/2022 11:00	12/02/2022 18:42
	93337-1-BLK	BLK	93337-1-BLK	W	93337	199408	12/01/2022 11:00	12/02/2022 18:37
	Effluent VSP-4 S	MS	22113014-001 S	W	93337	199408	12/01/2022 11:00	12/02/2022 18:52
	Effluent VSP-4 SD	MSD	22113014-001 S	W	93337	199408	12/01/2022 11:00	12/02/2022 19:13

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22113014

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199408 Matrix: Water Date Prep: 12/01/22
MB Sample Id: 93337-1-BLK LCS Sample Id: 93337-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	100	94.59	95	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199408 Matrix: Waste Water Date Prep: 12/01/22
Parent Sample Id: 22113014-001 MS Sample Id: 22113014-001 S MSD Sample Id: 22113014-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	3.391	100	96.03	93	96.84	93	70-130	1	25	ug/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22113014

Analytical Method: EPA 200.8
Seq Number: 199408 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 12/02/22 19:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	94.43	94	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199408 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 12/02/22 17:03

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	52.73	105	90-110	ug/L	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22113014 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-flex | PROJECT #: 31405608.010/0202

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	Analysis/ Method Required: Total metals (200.8) Copper only	3
1	Effluent VSP-4	11/30/22	1340	WW	1	G		X	

⑤ ④

Relinquished By: (1)	Date	Time	Received By:
[signature]	11/30/22	1430	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

Requested TAT (One TAT per COC): ☐ 5-Day ☒ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB: 4.7°c

Custody Seal: INTACT/COOLER

Coolers: 1 Temp: 5.1°C

Shipping Carrier: CLIENT

Special Instructions: ★Expedited 3-day TAT★ Copper only

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's fees or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22113014

Client Name WSP USA - Herndon
Disposal Date 01/04/2023

Received By Jillian Chapman
Date Received 11/30/2022 02:30:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	5.1
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	Shannon Burke
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	1

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 11/30/2022

PM Review and Approval: Amber Confer Date: 11/30/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120711

December 21, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22120711**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/0202

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22120711**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 11, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22120711

Project ID: 31405608.010/0202

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/07/2022 at 12:05 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22120711-001	Effluent VSP-4	WASTE WATER	12/07/22 09:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120711

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/07/2022 09:10** **PSS Sample ID: 22120711-001**
Matrix: WASTE WATER **Date/Time Received: 12/07/2022 12:05**

Total Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**5.5**	ug/L	1.0		1	12/08/22	12/08/22 17:30	1059
Lead	ND	ug/L	1.0		1	12/08/22	12/08/22 17:30	1059
Nickel	**14.9**	ug/L	1.00		1	12/08/22	12/12/22 17:47	1059
Zinc	**30.9**	ug/L	20.0		1	12/08/22	12/08/22 17:30	1059

Dissolved Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	**4.1**	ug/L	1.0		1	12/12/22	12/14/22 02:10	1064
Lead	ND	ug/L	1.0		1	12/12/22	12/14/22 02:10	1064
Nickel	**16.6**	ug/L	1.00		1	12/12/22	12/14/22 02:10	1064
Zinc	**31.3**	ug/L	20.0		1	12/12/22	12/14/22 02:10	1064

VOC (Full List) — Analytical Method: EPA 624 .1 — Preparation Method: E624.1

Qualifier(s): See Batch 199510 on Case Narrative.
pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	12/07/22	12/07/22 13:42	1011
Acrylonitrile	ND	ug/L	5.0		1	12/07/22	12/07/22 13:42	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Chloromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Vinyl Chloride	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Bromomethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Chloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Methylene Chloride	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Chloroform	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Benzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120711

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/07/2022 09:10** **PSS Sample ID: 22120711-001**
Matrix: WASTE WATER **Date/Time Received: 12/07/2022 12:05**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 199510 on Case Narrative.

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Bromodichloromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Toluene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Tetrachloroethylene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Dibromochloromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Chlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Ethylbenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
Bromoform	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:42	1011

Surrogate(s)	***Recovery***		***Limits***					
Dibromofluoromethane	*116*	*%*	*94-108*	*	*1*	*12/07/22*	*12/07/22 13:42*	*1011*
4-Bromofluorobenzene	*106*	*%*	*77-120*		*1*	*12/07/22*	*12/07/22 13:42*	*1011*
Toluene-D8	*101*	*%*	*95-104*		*1*	*12/07/22*	*12/07/22 13:42*	*1011*

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	**23**	mg/L	0.66		1	12/08/22	12/19/22 22:18	1064

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120711

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/07/2022 09:10** **PSS Sample ID: 22120711-001**
Matrix: WASTE WATER **Date/Time Received: 12/07/2022 12:05**

Total Suspended Solids — Analytical Method: SM 2540D -2015

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	2.2		1	12/12/22	12/12/22 18:05	1073

Biochemical Oxygen Demand — Analytical Method: SM 5210B -2011

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	2		12/08/22	12/08/22 11:16	4009

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Project Name: Kop-Flex

PSS Project No.: 22120711

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22120711: Analyses associated with analyst code 4009 were performed by
Martel Laboratories, Inc., 1025 Cromwell Bridge Road, Towson, MD 21204

Analytical:

Dissolved Metals

Batch: 199679
Method exceedance: Laboratory control sample (LCS) exceedance identified; see QC summary.

Analytical:

Volatile Organics Compounds

Batch: 199510
Method exceedance: Quality control sample surrogate exceedances identified, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Analytical Method(s): SM 5210B -2011

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22120711

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	22120711-001	W	93425	199562	12/08/2022 10:10	12/08/2022 17:30
	93425-1-BKS	BKS	93425-1-BKS	W	93425	199562	12/08/2022 10:10	12/08/2022 17:24
	93425-1-BLK	BLK	93425-1-BLK	W	93425	199562	12/08/2022 10:10	12/08/2022 17:19
	Millville 001 S	MS	22120709-001 S	W	93425	199562	12/08/2022 10:10	12/08/2022 19:49
	Effluent VSP-4 S	MS	22120711-001 S	W	93425	199562	12/08/2022 10:10	12/08/2022 17:35
	Effluent VSP-4 SD	MSD	22120711-001 S	W	93425	199562	12/08/2022 10:10	12/08/2022 17:41
	93425-1-BKS	Reanalysis	93425-1-BKS	W	93425	199690	12/08/2022 10:10	12/12/2022 16:21
	93425-1-BLK	Reanalysis	93425-1-BLK	W	93425	199690	12/08/2022 10:10	12/12/2022 16:16
	Millville 001 S	Reanalysis	22120709-001 S	W	93425	199690	12/08/2022 10:10	12/12/2022 18:08
	Effluent VSP-4 S	Reanalysis	22120711-001 S	W	93425	199690	12/08/2022 10:10	12/12/2022 17:53
	Effluent VSP-4 SD	Reanalysis	22120711-001 S	W	93425	199690	12/08/2022 10:10	12/12/2022 17:58
	Effluent VSP-4	Reanalysis	22120711-001	W	93425	199690	12/08/2022 10:10	12/12/2022 17:47
EPA 200.8 Dissolved	Millville 001 S	MS	22120708-001 S	W	93490	199648	12/12/2022 19:30	12/13/2022 02:03
	Millville 001 SD	MSD	22120708-001 S	W	93490	199648	12/12/2022 19:30	12/13/2022 02:24
	93490-1-BKS	Reanalysis	93490-1-BKS	W	93490	199679	12/12/2022 19:30	12/14/2022 01:29
	93490-1-BLK	Reanalysis	93490-1-BLK	W	93490	199679	12/12/2022 19:30	12/14/2022 01:24
	Effluent VSP-4	Reanalysis	22120711-001	W	93490	199679	12/12/2022 19:30	12/14/2022 02:10
EPA 624 .1	Effluent VSP-4	Initial	22120711-001	W	93427	199510	12/07/2022 10:19	12/07/2022 13:42
	93427-1-BKS	BKS	93427-1-BKS	W	93427	199510	12/07/2022 10:19	12/07/2022 11:14
	93427-1-BLK	BLK	93427-1-BLK	W	93427	199510	12/07/2022 10:19	12/07/2022 12:57
	Effluent VSP-4 S	MS	22120711-001 S	W	93427	199510	12/07/2022 10:19	12/07/2022 14:05
	Effluent VSP-4 SD	MSD	22120711-001 S	W	93427	199510	12/07/2022 10:19	12/07/2022 14:28
SM 2340B	Effluent VSP-4	Initial	22120711-001	W	93425	199856	12/08/2022 10:10	12/19/2022 22:18
SM 2540D -2015	Effluent VSP-4	Initial	22120711-001	W	199629	199629	12/12/2022 18:05	12/12/2022 18:05
	199629-1-BKS	BKS	199629-1-BKS	W	199629	199629	12/12/2022 18:05	12/12/2022 18:05
	199629-1-BLK	BLK	199629-1-BLK	W	199629	199629	12/12/2022 18:05	12/12/2022 18:05
	Effluent VSP-4 D	MD	22120711-001 D	W	199629	199629	12/12/2022 18:05	12/12/2022 18:05
	TOC- Backwash D	MD	22120902-003 D	W	199629	199629	12/12/2022 18:05	12/12/2022 18:05
SM 5210B -2011	Effluent VSP-4	Initial	22120711-001	W	199880	199880	12/08/2022 11:16	12/08/2022 11:16

Analytical Method: SM 2540D -2015
Seq Number: 199629 Matrix: Water
MB Sample Id: 199629-1-BLK LCS Sample Id: 199629-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Suspended Solids	<1.000	100	97.90	98	86-110	mg/L	

Analytical Method: SM 2540D -2015
Seq Number: 199629 Matrix: Waste Water
Parent Sample Id: 22120711-001 MD Sample Id: 22120711-001 D

Parameter	Parent Result	MD Result	RPD	RPD Limit	Units	Flag
Suspended Solids	<2.222	<2.222	NC	19	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199562 Matrix: Water Date Prep: 12/08/22
MB Sample Id: 93425-1-BLK LCS Sample Id: 93425-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	44.96	90	85-115	ug/L	
Lead	<1.000	50.00	46.23	92	85-115	ug/L	
Zinc	<20.00	100	91.93	92	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199690 Matrix: Water Date Prep: 12/08/22
MB Sample Id: 93425-1-BLK LCS Sample Id: 93425-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	50.00	43.17	86	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199562 Matrix: Waste Water Date Prep: 12/08/22
Parent Sample Id: 22120711-001 MS Sample Id: 22120711-001 S MSD Sample Id: 22120711-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	5.544	50.00	51.73	92	53.13	95	70-130	3	25	ug/L	
Lead	<1.000	50.00	46.90	94	47.37	95	70-130	1	25	ug/L	
Zinc	30.92	100	122.9	92	128	97	70-130	4	25	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120711

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199690 Matrix: Waste Water Date Prep: 12/08/22
Parent Sample Id: 22120711-001 MS Sample Id: 22120711-001 S MSD Sample Id: 22120711-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Nickel	14.87	50.00	60.27	91	60.91	92	70-130	0	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 199679 Matrix: Water Date Prep: 12/12/22
MB Sample Id: 93490-1-BLK LCS Sample Id: 93490-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	50.00	47.78	96	85-115	ug/L	
Lead	<1.000	50.00	47.24	94	85-115	ug/L	
Nickel	<1.000	50.00	64.54	129	85-115	ug/L	
Zinc	<20.00	100	94.27	94	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120711

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 199510
Matrix: Water
Date Prep: 12/07/22
MB Sample Id: 93427-1-BLK
LCS Sample Id: 93427-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	47.32	95	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	44.66	89	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	60.20	120	51-128	ug/L	
Chloromethane	0.1200	50.00	46.37	93	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	71.77	144	5-195	ug/L	
Bromomethane	0.1700	50.00	55.95	112	15-185	ug/L	
Chloroethane	<0.001000	50.00	44.89	90	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	62.06	124	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	7.669	15	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	44.35	89	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	44.54	89	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	43.29	87	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	46.29	93	70-130	ug/L	
Chloroform	<0.001000	50.00	51.20	102	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.28	101	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	53.85	108	70-130	ug/L	
Benzene	<0.001000	50.00	44.13	88	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	57.49	115	70-130	ug/L	
Trichloroethene	<0.001000	50.00	47.62	95	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	46.26	93	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	54.47	109	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	46.79	94	25-175	ug/L	
Toluene	<0.001000	50.00	43.37	87	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.56	97	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	50.08	100	70-130	ug/L	
Tetrachloroethylene	<0.001000	50.00	47.85	96	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	56.10	112	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	45.09	90	65-135	ug/L	
Ethylbenzene	0.03000	50.00	45.10	90	60-140	ug/L	
Bromoform	<0.001000	50.00	59.36	119	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	46.21	92	60-140	ug/L	
1,3-Dichlorobenzene	0.08000	50.00	45.41	91	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	45.82	92	65-135	ug/L	
1,2-Dichlorobenzene	0.05000	50.00	45.78	92	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	114	*	114	*	94-108	%
4-Bromofluorobenzene	105		94		77-120	%
Toluene-D8	100		101		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120711

Analytical Method: EPA 624 .1 Prep Method: E624PREP
Seq Number: 199510 Matrix: Waste Water Date Prep: 12/07/22
Parent Sample Id: 22120711-001 MS Sample Id: 22120711-001 S MSD Sample Id: 22120711-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acrolein	<5.000	50.00	43.57	87	39.69	79	40-160	9	60	ug/L	
Acrylonitrile	<5.000	50.00	39.61	79	36.17	72	40-160	9	60	ug/L	
Dichlorodifluoromethane	<1.000	50.00	62.93	126	57.30	115	49-132	9	14	ug/L	
Chloromethane	<1.000	50.00	46.85	94	43.45	87	1-273	8	60	ug/L	
Vinyl Chloride	<1.000	50.00	94.71	189	80.07	160	1-251	17	66	ug/L	
Bromomethane	<1.000	50.00	57.94	116	50.49	101	1-242	14	61	ug/L	
Chloroethane	<1.000	50.00	48.79	98	41.63	83	14-230	16	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	69.38	139	57.10	114	17-181	19	84	ug/L	
2-Chloroethyl Vinyl Ether	<1.000	50.00	5.140	10	5.800	12	1-305	12	71	ug/L	
1,1-Dichloroethene	<1.000	50.00	42.34	85	39.95	80	1-234	6	32	ug/L	
Methylene Chloride	<1.000	50.00	43.14	86	39.00	78	1-221	10	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	43.18	86	38.52	77	54-156	11	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.81	92	40.41	81	59-155	13	40	ug/L	
Chloroform	<1.000	50.00	51.15	102	45.12	90	51-138	13	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.67	103	45.14	90	52-162	13	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	56.56	113	49.13	98	70-140	14	41	ug/L	
Benzene	<1.000	50.00	43.53	87	38.31	77	37-151	13	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	56.71	113	50.55	101	49-155	11	49	ug/L	
Trichloroethene	<1.000	50.00	47.74	95	42.19	84	70-157	12	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	43.75	88	39.42	79	1-210	10	55	ug/L	
Bromodichloromethane	<1.000	50.00	52.36	105	47.79	96	35-155	9	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.41	89	39.81	80	1-227	11	58	ug/L	
Toluene	<1.000	50.00	43.11	86	39.05	78	47-150	10	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.32	91	41.64	83	17-183	8	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	46.70	93	42.47	85	52-150	9	45	ug/L	
Tetrachloroethylene	<1.000	50.00	49.80	100	42.51	85	64-148	16	39	ug/L	
Dibromochloromethane	<1.000	50.00	51.77	104	46.53	93	53-149	11	50	ug/L	
Chlorobenzene	<1.000	50.00	44.21	88	38.92	78	37-160	13	53	ug/L	
Ethylbenzene	<1.000	50.00	45.27	91	39.70	79	37-162	13	63	ug/L	
Bromoform	<1.000	50.00	53.55	107	48.94	98	45-169	9	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	39.87	80	37.41	75	46-157	6	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	43.34	87	38.44	77	59-156	12	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	43.46	87	39.58	79	18-190	9	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	42.87	86	38.88	78	18-190	10	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	117	*	115	*	94-108	%
4-Bromofluorobenzene	94		93		77-120	%
Toluene-D8	102		102		95-104	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 199562 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 12/08/22 18:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	93.79	94	85-115	ug/L	
Lead	100	98.79	99	85-115	ug/L	
Zinc	200	188	94	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199562 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 12/08/22 19:12

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	94.57	95	85-115	ug/L	
Lead	100	94.43	94	85-115	ug/L	
Zinc	200	193.7	97	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199562 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 12/08/22 20:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	97.77	98	85-115	ug/L	
Lead	100	93.89	94	85-115	ug/L	
Zinc	200	199.3	100	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199690 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 12/12/22 17:15

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	100	90.54	91	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199690 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 12/12/22 18:24

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	100	88.91	89	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199690 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 12/12/22 19:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	100	89.26	89	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199690 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 12/12/22 20:47

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	89.32	89	85-115	ug/L	
Lead	100	91.07	91	85-115	ug/L	
Nickel	100	88.93	89	85-115	ug/L	
Zinc	200	183.5	92	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199690 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 12/12/22 22:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	89.29	89	85-115	ug/L	
Lead	100	90.79	91	85-115	ug/L	
Nickel	100	88.00	88	85-115	ug/L	
Zinc	200	181.8	91	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199690 Matrix: Water
CCV Sample Id: CCV 6 Analyzed Date: 12/12/22 23:05

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	89.55	90	85-115	ug/L	
Lead	100	90.82	91	85-115	ug/L	
Nickel	100	88.80	89	85-115	ug/L	
Zinc	200	186.5	93	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199562 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 12/08/22 11:49

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	50.82	102	90-110	ug/L	
Lead	50.00	51.37	103	90-110	ug/L	
Zinc	100	104	104	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 199690 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 12/12/22 15:49

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	50.00	50.03	100	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199679 Matrix: Water

CCV Sample Id: CCV 1 Analyzed Date: 12/14/22 00:44

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	96.40	96	85-115	ug/L	
Lead	100	99.89	100	85-115	ug/L	
Nickel	100	102.4	102	85-115	ug/L	
Zinc	200	189.5	95	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199679 Matrix: Water

CCV Sample Id: CCV 2 Analyzed Date: 12/14/22 01:50

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	98.31	98	85-115	ug/L	
Lead	100	98.21	98	85-115	ug/L	
Nickel	100	101.9	102	85-115	ug/L	
Zinc	200	195.4	98	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199679 Matrix: Water

CCV Sample Id: CCV 3 Analyzed Date: 12/14/22 02:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	100	97.87	98	85-115	ug/L	
Lead	100	99.57	100	85-115	ug/L	
Nickel	100	101.1	101	85-115	ug/L	
Zinc	200	195	98	85-115	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120711

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199679 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 12/14/22 00:19

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	50.00	49.98	100	90-110	ug/L	
Lead	50.00	51.45	103	90-110	ug/L	
Nickel	50.00	52.62	105	90-110	ug/L	
Zinc	100	99.78	100	90-110	ug/L	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120711

Analytical Method: EPA 624 .1

Seq Number: 199025 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/16/22 20:03

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05331	107	33-138	mg/L	
Acrylonitrile	0.05000	0.05292	106	59-124	mg/L	
Dichlorodifluoromethane	0.05000	0.04935	99	51-128	mg/L	
Chloromethane	0.05000	0.04694	94	24-139	mg/L	
Vinyl Chloride	0.05000	0.04715	94	30-148	mg/L	
Bromomethane	0.05000	0.05025	101	41-121	mg/L	
Chloroethane	0.05000	0.04990	100	61-109	mg/L	
Trichlorofluoromethane	0.05000	0.05281	106	70-114	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05916	118	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05149	103	73-112	mg/L	
Methylene Chloride	0.05000	0.05125	103	75-115	mg/L	
trans-1,2-dichloroethene	0.05000	0.05190	104	76-116	mg/L	
1,1-Dichloroethane	0.05000	0.05182	104	67-115	mg/L	
Chloroform	0.05000	0.05146	103	71-110	mg/L	
1,1,1-Trichloroethane	0.05000	0.05188	104	76-113	mg/L	
Carbon Tetrachloride	0.05000	0.05328	107	81-114	mg/L	
Benzene	0.05000	0.05215	104	74-114	mg/L	
1,2-Dichloroethane	0.05000	0.05095	102	64-112	mg/L	
Trichloroethene	0.05000	0.05277	106	78-115	mg/L	
1,2-Dichloropropane	0.05000	0.05168	103	69-115	mg/L	
Bromodichloromethane	0.05000	0.05269	105	79-114	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05321	106	84-114	mg/L	
Toluene	0.05000	0.05119	102	78-115	mg/L	
trans-1,3-dichloropropene	0.05000	0.05418	108	81-115	mg/L	
1,1,2-Trichloroethane	0.05000	0.05192	104	78-116	mg/L	
Tetrachloroethylene	0.05000	0.05278	106	74-129	mg/L	
Dibromochloromethane	0.05000	0.05637	113	80-133	mg/L	
Chlorobenzene	0.05000	0.05262	105	78-117	mg/L	
Ethylbenzene	0.05000	0.05142	103	79-116	mg/L	
Bromoform	0.05000	0.05805	116	72-138	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05325	107	65-126	mg/L	
1,3-Dichlorobenzene	0.05000	0.05330	107	77-123	mg/L	
1,4-Dichlorobenzene	0.05000	0.05325	107	76-122	mg/L	
1,2-Dichlorobenzene	0.05000	0.05370	107	75-126	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	94-108	%	
4-Bromofluorobenzene	98	77-120	%	
Toluene-D8	99	95-104	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22120711 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31405608.010/0202

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke, Tushar Khaire | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes											
							Analysis/ Method Required ③	VOCs (624)	Total metals + hardness (200.8)	Dissolved metals (200.8) -filtered	TSS	BOD						
								1,6	3	3	6	6						
	Effluent VSP-4	12/7/22	0910	WW	7	G		X	X	X	X	X						

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1) Shannon Burke	12/7/22	1020	Van Carter
(2) Van Carter	12/07/22	12:05	Aubrey Cofer
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB=0.4°C

Custody Seal: INTACT-COOLER

Coolers: 1 | Temp: 0.6-0.7°C

Shipping Carrier: FTE

Special Instructions:
Standard 10-day TAT
Metals = Cu, Pb, Ni, Zn
Dissolved metals field-filtered

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22120711

Client Name WSP USA - Herndon
Disposal Date 01/11/2023

Received By Amber Confer
Date Received 12/07/2022 12:05:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Amber Confer

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	.7
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	S. Burke/T. Kharre
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	7

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Amber Confer — Date: 12/07/2022

PM Review and Approval: Lynn Jackson — Date: 12/07/2022

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120712

December 21, 2022

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **22120712**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31405608.010/0202

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22120712**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 11, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 22120712

Project ID: 31405608.010/0202

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/07/2022 at 12:05 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22120712-001	Effluent VSP-4	WASTE WATER	12/07/22 09:10
22120712-002	TB- 120712	WASTE WATER	12/07/22 12:05

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120712

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/07/2022 09:10** **PSS Sample ID: 22120712-001**
Matrix: WASTE WATER **Date/Time Received: 12/07/2022 12:05**

1,4-Dioxane by GC/MS - SIM — Analytical Method: SW-846 8260 D-SIM — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	**6.6**	ug/L	1.0		1	12/19/22	12/19/22 14:56	1011
Surrogate(s)	***Recovery***		***Limits***					
Toluene-D8	*101*	*%*	*80-120*		*1*	*12/19/22*	*12/19/22 14:56*	*1011*

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120712

Sample ID: TB- 120712 **Date/Time Sampled: 12/07/2022 12:05** **PSS Sample ID: 22120712-002**
Matrix: WASTE WATER **Date/Time Received: 12/07/2022 12:05**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 199510 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	5.0		1	12/07/22	12/07/22 13:20	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Acrylonitrile	ND	ug/L	5.0		1	12/07/22	12/07/22 13:20	1011
Chloromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Vinyl Chloride	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Bromomethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Chloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
2-Chloroethyl Vinyl Ether	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Methylene Chloride	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Chloroform	**1.1**	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Benzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Trichloroethene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Bromodichloromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Toluene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Tetrachloroethylene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Dibromochloromethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Chlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Ethylbenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
Bromoform	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	12/07/22	12/07/22 13:20	1011

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Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 22120712

Sample ID: TB- 120712 **Date/Time Sampled: 12/07/2022 12:05** **PSS Sample ID: 22120712-002**
Matrix: WASTE WATER **Date/Time Received: 12/07/2022 12:05**

VOC (Full List) Analytical Method: EPA 624 .1 Preparation Method: E624.1

Qualifier(s): See Batch 199510 on Case Narrative.

pH=2

Surrogate(s)	*Recovery*		*Limits*					
Dibromofluoromethane	*114*	*%*	*94-108*	*	*1*	*12/07/22*	*12/07/22 13:20*	*1011*
4-Bromofluorobenzene	*103*	*%*	*77-120*		*1*	*12/07/22*	*12/07/22 13:20*	*1011*
Toluene-D8	*101*	*%*	*95-104*		*1*	*12/07/22*	*12/07/22 13:20*	*1011*

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 D-SIM Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	12/19/22	12/19/22 15:18	1011

Surrogate(s)	*Recovery*		*Limits*				
Toluene-D8	*101*	*%*	*80-120*		*1*	*12/19/22*	*12/19/22 15:18*	*1011*

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Project Name: Kop-Flex

PSS Project No.: 22120712

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

Volatile Organics Compounds

Batch: 199510

Method exceedance: Quality control sample surrogate exceedances identified, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 D-SIM: 1,4-Dioxane

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Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 22120712

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB- 120712	Initial	22120712-002	W	93427	199510	12/07/2022 10:19	12/07/2022 13:20
	93427-1-BKS	BKS	93427-1-BKS	W	93427	199510	12/07/2022 10:19	12/07/2022 11:14
	93427-1-BLK	BLK	93427-1-BLK	W	93427	199510	12/07/2022 10:19	12/07/2022 12:57
	Effluent VSP-4 S	MS	22120711-001 S	W	93427	199510	12/07/2022 10:19	12/07/2022 14:05
	Effluent VSP-4 SD	MSD	22120711-001 S	W	93427	199510	12/07/2022 10:19	12/07/2022 14:28
SW-846 8260 D-SIM	Effluent VSP-4	Initial	22120712-001	W	93592	199838	12/19/2022 09:04	12/19/2022 14:56
	TB- 120712	Initial	22120712-002	W	93592	199838	12/19/2022 09:04	12/19/2022 15:18
	93592-1-BKS	BKS	93592-1-BKS	W	93592	199838	12/19/2022 09:04	12/19/2022 13:26
	93592-1-BLK	BLK	93592-1-BLK	W	93592	199838	12/19/2022 09:04	12/19/2022 14:33
	93592-1-BSD	BSD	93592-1-BSD	W	93592	199838	12/19/2022 09:04	12/19/2022 13:48

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120712

Analytical Method: EPA 624 .1
Prep Method: E624PREP
Seq Number: 199510
Matrix: Water
Date Prep: 12/07/22
MB Sample Id: 93427-1-BLK
LCS Sample Id: 93427-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acrolein	<0.005000	50.00	47.32	95	60-140	ug/L	
Acrylonitrile	<0.005000	50.00	44.66	89	60-140	ug/L	
Dichlorodifluoromethane	<0.001000	50.00	60.20	120	51-128	ug/L	
Chloromethane	0.1200	50.00	46.37	93	1-205	ug/L	
Vinyl Chloride	<0.001000	50.00	71.77	144	5-195	ug/L	
Bromomethane	0.1700	50.00	55.95	112	15-185	ug/L	
Chloroethane	<0.001000	50.00	44.89	90	40-160	ug/L	
Trichlorofluoromethane	<0.001000	50.00	62.06	124	50-150	ug/L	
2-Chloroethyl Vinyl Ether	<0.001000	50.00	7.669	15	1-225	ug/L	
1,1-Dichloroethene	<0.001000	50.00	44.35	89	50-150	ug/L	
Methylene Chloride	<0.001000	50.00	44.54	89	60-140	ug/L	
trans-1,2-dichloroethene	<0.001000	50.00	43.29	87	70-130	ug/L	
1,1-Dichloroethane	<0.001000	50.00	46.29	93	70-130	ug/L	
Chloroform	<0.001000	50.00	51.20	102	70-135	ug/L	
1,1,1-Trichloroethane	<0.001000	50.00	50.28	101	70-130	ug/L	
Carbon Tetrachloride	<0.001000	50.00	53.85	108	70-130	ug/L	
Benzene	<0.001000	50.00	44.13	88	65-135	ug/L	
1,2-Dichloroethane	<0.001000	50.00	57.49	115	70-130	ug/L	
Trichloroethene	<0.001000	50.00	47.62	95	65-135	ug/L	
1,2-Dichloropropane	<0.001000	50.00	46.26	93	35-165	ug/L	
Bromodichloromethane	<0.001000	50.00	54.47	109	65-135	ug/L	
cis-1,3-Dichloropropene	<0.001000	50.00	46.79	94	25-175	ug/L	
Toluene	<0.001000	50.00	43.37	87	70-130	ug/L	
trans-1,3-dichloropropene	<0.001000	50.00	48.56	97	50-150	ug/L	
1,1,2-Trichloroethane	<0.001000	50.00	50.08	100	70-130	ug/L	
Tetrachloroethylene	<0.001000	50.00	47.85	96	70-130	ug/L	
Dibromochloromethane	<0.001000	50.00	56.10	112	70-135	ug/L	
Chlorobenzene	<0.001000	50.00	45.09	90	65-135	ug/L	
Ethylbenzene	0.03000	50.00	45.10	90	60-140	ug/L	
Bromoform	<0.001000	50.00	59.36	119	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<0.001000	50.00	46.21	92	60-140	ug/L	
1,3-Dichlorobenzene	0.08000	50.00	45.41	91	70-130	ug/L	
1,4-Dichlorobenzene	<0.001000	50.00	45.82	92	65-135	ug/L	
1,2-Dichlorobenzene	0.05000	50.00	45.78	92	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	114	*	114	*	94-108	%
4-Bromofluorobenzene	105		94		77-120	%
Toluene-D8	100		101		95-104	%

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120712

Analytical Method: SW-846 8260 D-SIM Prep Method: SW5030B
Seq Number: 199838 Matrix: Water Date Prep: 12/19/22
MB Sample Id: 93592-1-BLK LCS Sample Id: 93592-1-BKS LCSD Sample Id: 93592-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	29.75	99	31.04	103	50-150	4	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	100		101		103		80-120	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120712

Analytical Method: EPA 624 .1

Seq Number: 199025 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/16/22 20:03

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acrolein	0.05000	0.05331	107	33-138	mg/L	
Acrylonitrile	0.05000	0.05292	106	59-124	mg/L	
Dichlorodifluoromethane	0.05000	0.04935	99	51-128	mg/L	
Chloromethane	0.05000	0.04694	94	24-139	mg/L	
Vinyl Chloride	0.05000	0.04715	94	30-148	mg/L	
Bromomethane	0.05000	0.05025	101	41-121	mg/L	
Chloroethane	0.05000	0.04990	100	61-109	mg/L	
Trichlorofluoromethane	0.05000	0.05281	106	70-114	mg/L	
2-Chloroethyl Vinyl Ether	0.05000	0.05916	118	15-141	mg/L	
1,1-Dichloroethene	0.05000	0.05149	103	73-112	mg/L	
Methylene Chloride	0.05000	0.05125	103	75-115	mg/L	
trans-1,2-dichloroethene	0.05000	0.05190	104	76-116	mg/L	
1,1-Dichloroethane	0.05000	0.05182	104	67-115	mg/L	
Chloroform	0.05000	0.05146	103	71-110	mg/L	
1,1,1-Trichloroethane	0.05000	0.05188	104	76-113	mg/L	
Carbon Tetrachloride	0.05000	0.05328	107	81-114	mg/L	
Benzene	0.05000	0.05215	104	74-114	mg/L	
1,2-Dichloroethane	0.05000	0.05095	102	64-112	mg/L	
Trichloroethene	0.05000	0.05277	106	78-115	mg/L	
1,2-Dichloropropane	0.05000	0.05168	103	69-115	mg/L	
Bromodichloromethane	0.05000	0.05269	105	79-114	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05321	106	84-114	mg/L	
Toluene	0.05000	0.05119	102	78-115	mg/L	
trans-1,3-dichloropropene	0.05000	0.05418	108	81-115	mg/L	
1,1,2-Trichloroethane	0.05000	0.05192	104	78-116	mg/L	
Tetrachloroethylene	0.05000	0.05278	106	74-129	mg/L	
Dibromochloromethane	0.05000	0.05637	113	80-133	mg/L	
Chlorobenzene	0.05000	0.05262	105	78-117	mg/L	
Ethylbenzene	0.05000	0.05142	103	79-116	mg/L	
Bromoform	0.05000	0.05805	116	72-138	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05325	107	65-126	mg/L	
1,3-Dichlorobenzene	0.05000	0.05330	107	77-123	mg/L	
1,4-Dichlorobenzene	0.05000	0.05325	107	76-122	mg/L	
1,2-Dichlorobenzene	0.05000	0.05370	107	75-126	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	94-108	%	
4-Bromofluorobenzene	98	77-120	%	
Toluene-D8	99	95-104	%	

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QC Summary

Project Name Kop-Flex
PSS Project No.: 22120712

Analytical Method: SW-846 8260 D-SIM
Seq Number: 199838 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 12/19/22 13:04

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.07	100	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	97	80-120	%	

Analytical Method: SW-846 8260 D-SIM
Seq Number: 199838 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 12/19/22 12:41

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.66	102	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	100	80-120	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: WSP USA | OFFICE LOCATION: Herndon, VA | PSS Work Order #: 22120712 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 703-709-6500

CONTACT: Eric Johnson | EMAIL: eric.johnson@wsp.com

PROJECT NAME: Kop-Flex | PROJECT #: 31405608.010/0202

SITE LOCATION: Hanover, MD | P.O. #:

SAMPLER(S): Shannon Burke, Tushar Khaire | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	1	1										Analysis/ Method Required: 1,4-dioxane (8260 SIM)	VOCs (624)
	Effluent VSP-4	12/7/22	0910	WW	3	G		X												
	TB-120722	—	—	TB	4	—		X	X											

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By:	Date	Time	Received By:
(1)	12/7/22	1020	
(2)	12/07/22	12:05	
(3)			
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☒ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER _____

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES TB=0.4°C

Custody Seal: INTACT-COOLER

Coolers: 1 Temp: 0.6-0.7°C

Shipping Carrier: TTE

Special Instructions: Standard 10-day TAT

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 22120712

Client Name WSP USA - Herndon
Disposal Date 01/11/2023

Received By Amber Confer
Date Received 12/07/2022 12:05:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Amber Confer

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	Yes	Temp (deg C)	.7
Seal(s) Signed / Dated?	Yes	Temp Blank Present	Yes

Documentation

		Sampler Name	S. Burke/T. Kharre
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	6

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		Yes
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Amber Confer — Date: 12/07/2022

PM Review and Approval: Lynn Jackson — Date: 12/07/2022

APPENDIX

B WASTE DISPOSAL DOCUMENTATION FOR RECOVERY WELL REHABILITATION PURGE WATER

NON-HAZARDOUS WASTE MANIFEST

Generator acknowledges that no material changes are allowed either in the characteristics or in the process generating the material.

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. 73935 1 (800) 483-3719

Manifest Document No. NH 2202308952 2. Page 1 of

3. Generator's Name and Mailing Address
Rob Fiedler
13520 Dulles Technology DR STE# 300
Herndon, VA 20171
4. Generator's Phone (703) 709-6500 ATTN Eric Johnson
7565 Harmans Road
Hanover, MD 21076

5. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc.
6. US EPA ID Number
A. State Transporter's ID
B. Transporter 1 Phone 8139322250

7. Transporter 2 Company Name
8. US EPA ID Number
C. State Transporter's ID
D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Spring Grove Resource Recovery Inc.
4979 Spring Grove Avenue
Cincinnati, OH 45232
(513) 681-5739
10. US EPA ID Number
E. State Facility's ID: OHD000816629
F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON DOT REGULATED MATERIAL, (PURGE WATER)	3	DM	12,000	P
b. NON HAZARDOUS, NON D.O.T. REGULATED, (SOIL CUTTINGS)	2	DM	800	P
c. NON DOT REGULATED MATERIAL, (PURGE WATER)	12	DM	4800	P
d.				

12. Additional Descriptions for Materials Listed Above
1 CH2513969 3X55DM
2 CH2513970 2X55DM
3 CH2513418 12X55DM

H. Handling Codes for Wastes Listed Above

Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf for purposes of transportation efficiency, convenience or safety.

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: X Chuck Braun S&S Tech
Signature: X [signature] on behalf of WSA →
Date: Month 1 | Day 6 | Year 23

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Darren Hudkey
Signature: [signature]
Date: Month 01 | Day 06 | Year 23

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
H141 H141 H141
Printed/Typed Name
Signature
Date: Month | Day | Year

NON-HAZARDOUS WASTE

CF14 © 2002 LABELMASTER® (800) 621-5808 www.labelmaster.com

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping

D4 2202308952 PF W

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APPENDIX

C BORING LOG AND WELL CONSTRUCTION DIAGRAM FOR MW-04R

RECORD OF BOREHOLE: MW-04 Replacement

CLIENT: Emerson
PROJECT: Kop-Flex Onsite Area
PROJECT NO: 31405608
LOCATION: Hanover, MD
DATE: September 12, 2022
CONTRACTOR: Parratt-Wolff
ELEVATION: 127.6 ft (Ground)
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS	GROUNDWATER OBSERVATIONS	CONSTRUCTION AND INSTALLATION DETAILS
0			Brown (7.5YR 3/4) to pink (7.5YR 8/4) to very dark grey (3/1) sand with traces of silt; primarily fine grained; dry to slightly moist	SW		0.0	1		90					
			No recovery			123.1 4.5								
5			Dark brown (7.5YR 3/3) to brown (7.5YR 5/3) sand; fine to medium grained; dry to slightly moist	SP		122.6 5.0								
			1/2 inch clay layer			121.3 6.3								
7			Pinkish white (7.5YR 8/2) to very dark brown (7.5YR 2.5/2) to pink (7.5YR 8/4) sand; fine to medium grained; dry to slightly moist	SP		121.2 6.4	2		74					
			No recovery			118.9 8.7								

Continued on Next Page

HAMMER TYPE: N/A

REV:

LOGGED: Owen Williamson DATE: Sep 12, 2022
CHECKED: Eric Johnson DATE: Mar 03, 2023

RECORD OF BOREHOLE: MW-04 Replacement

CLIENT: Emerson
PROJECT: Kop-Flex Onsite Area
PROJECT NO: 31405608
LOCATION: Hanover, MD
DATE: September 12, 2022
CONTRACTOR: Parratt-Wolff
ELEVATION: 127.6 ft (Ground)
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS	GROUNDWATER OBSERVATIONS	CONSTRUCTION AND INSTALLATION DETAILS
			No recovery			117.6								
10			Dark brown (7.5YR 3/3) to strong brown (7.5 YR 5/6) sand with traces of clay; primarily fine grained with some medium size grains	SP		10.0								
11														
12						115.1	3		60					
			1/4 inch clay layer			12.5								
			Strong brown (7.5YR 5/6) to pinkish white (7.5YR 8/2) sand with traces of clay; fine to medium grained	SP		115.1 12.5 114.6								0.0 - 25.5 ft bgs: Bentonite Grout
13			No recovery			13.0								
14		HOLLOW-STEM AUGER												
						112.6								
15			Dark grey (7.5YR 4/1) to very dark grey (7.5YR 3/1) to brown (7.5YR 4/2) to pink (7.5YR 7/3) to pinkish white (7.5YR 8/2) sand with clay/silty material interspersed; sand grain size ranges from fine to coarse	SP-SM		15.0								0.0 - 30.0 ft bgs: Schedule 40 2" ID PVC
16												16.50 ft: Groundwater	▽	
17							4		70					
18						109.1								
			No recovery			18.5								

Continued on Next Page

HAMMER TYPE: N/A

REV:

LOGGED: Owen Williamson DATE: Sep 12, 2022
CHECKED: Eric Johnson DATE: Mar 03, 2023

RECORD OF BOREHOLE: MW-04 Replacement

CLIENT: Emerson
PROJECT: Kop-Flex Onsite Area
PROJECT NO: 31405608
LOCATION: Hanover, MD
DATE: September 12, 2022
CONTRACTOR: Parratt-Wolff
ELEVATION: 127.6 ft (Ground)
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS	GROUNDWATER OBSERVATIONS	CONSTRUCTION AND INSTALLATION DETAILS
19			No recovery											
20												20.00 - 25.00 ft: Sediment observed in sampler head consists of reddish yellow (7.5YR 7/6) well graded sand; grains range from medium to coarse to subrounded gravel; high moisture content		
21														
22														
23		HOLLOW-STEM AUGER					5		0					
24														
25						102.6								
			Pink (7.5YR 7/4) sand; medium to coarse grained; fine gravels scattered throughout; high moisture content	SW		25.0								
26						101.6								
			Light grey (7.5YR 7/1) clay; high moisture content	CH		26.0								
						101.1								
			Pinkish white (7.5YR 8/2) to light brown (7.5YR 6/3) sand; medium to coarse grained sand with fine gravel interspersed; high moisture content	SW		26.5								25.5 - 28.0 ft bgs: Bentonite Seal
27			1 inch thick clay layer; high moisture content	CH		100.1	6		88					
						27.5								
			Light brown (7.5YR 6/3) to dark grey (7.5YR 4/1) sand; medium to coarse sand grains with fine gravel interspersed; high moisture content	SW		100.0								
						27.6								

Continued on Next Page

HAMMER TYPE: N/A

REV:

LOGGED: Owen Williamson DATE: Sep 12, 2022
CHECKED: Eric Johnson DATE: Mar 03, 2023

RECORD OF BOREHOLE: MW-04 Replacement

CLIENT: Emerson
PROJECT: Kop-Flex Onsite Area
PROJECT NO: 31405608
LOCATION: Hanover, MD
DATE: September 12, 2022
CONTRACTOR: Parratt-Wolff
ELEVATION: 127.6 ft (Ground)
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS	GROUNDWATER OBSERVATIONS	CONSTRUCTION AND INSTALLATION DETAILS
28			Light brown (7.5YR 6/3) to dark grey (7.5YR 4/1) sand; medium to coarse sand grains with fine gravel interspersed; high moisture content	SW		98.2								
29			No recovery			29.4								
30			Pink (7.5YR 7/4) to grey (7.5YR 6/1 to reddish yellow (7.5YR 7/6) to pink (7.5YR 7/3) to light brown (7.5YR 6/4) sand with traces of gravel; sand grains are medium to slightly coarse; high moisture content	SP		97.6 30.0	7		82					
31														
32		HOLLOW-STEM AUGER												
33														
34			No recovery			93.5 34.1								28.0 - 40.0 ft bgs: Sand Filter Pack
35												35.00 - 40.00 ft: Sediment observed in sampler head consists of reddish yellow (7.5 YR 7/6) medium grained sand; high moisture content		30.0 - 40.0 ft bgs: Schedule 40 2" ID PVC with 0.020" slot screen
36														
37														

Continued on Next Page

HAMMER TYPE: N/A

REV:

LOGGED: Owen Williamson
DATE: Sep 12, 2022
CHECKED: Eric Johnson
DATE: Mar 03, 2023

RECORD OF BOREHOLE: MW-04 Replacement

CLIENT: Emerson
PROJECT: Kop-Flex Onsite Area
PROJECT NO: 31405608
LOCATION: Hanover, MD
DATE: September 12, 2022
CONTRACTOR: Parratt-Wolff
ELEVATION: 127.6 ft (Ground)
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS	GROUNDWATER OBSERVATIONS	CONSTRUCTION AND INSTALLATION DETAILS
38		HOLLOW-STEM AUGER	No recovery				8		0					
39														
40						87.6								
			END BOREHOLE			40.0						40.00 ft: END OF BOREHOLE		
41														
42														
43														
44														
45														
46														

HAMMER TYPE: N/A

REV:

LOGGED: Owen Williamson DATE: Sep 12, 2022
CHECKED: Eric Johnson DATE: Mar 03, 2023

APPENDIX

D LAB REPORTS FOR GROUNDWATER MONITORING

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **WSP USA Inc.**

Project Former KOP-Flex Facility Onsit
Workorder 3250320
Report ID 181150 on 7/13/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jun 27, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Elliott Martynkiewicz - WSP USA Inc.
Eric Johnson - WSP USA INC

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3250320001	MW-41D	Ground Water	06/26/2022 14:55	06/27/2022 19:00	CBC	Collected By Client
3250320002	MW-01	Ground Water	06/26/2022 15:05	06/27/2022 19:00	CBC	Collected By Client
3250320003	MW-01D	Ground Water	06/26/2022 15:10	06/27/2022 19:00	CBC	Collected By Client
3250320004	MW-22D	Ground Water	06/26/2022 15:25	06/27/2022 19:00	CBC	Collected By Client
3250320005	MW-04	Ground Water	06/26/2022 15:40	06/27/2022 19:00	CBC	Collected By Client
3250320006	MW-20	Ground Water	06/26/2022 15:50	06/27/2022 19:00	CBC	Collected By Client
3250320007	MW-09	Ground Water	06/26/2022 16:05	06/27/2022 19:00	CBC	Collected By Client
3250320008	MW-23D	Ground Water	06/26/2022 16:15	06/27/2022 19:00	CBC	Collected By Client
3250320009	MW-46D	Ground Water	06/26/2022 16:30	06/27/2022 19:00	CBC	Collected By Client
3250320010	MW-16	Ground Water	06/26/2022 17:00	06/27/2022 19:00	CBC	Collected By Client
3250320011	MW-03	Ground Water	06/26/2022 10:45	06/27/2022 19:00	CBC	Collected By Client
3250320012	MW-27D	Ground Water	06/26/2022 11:05	06/27/2022 19:00	CBC	Collected By Client
3250320013	MW-43	Ground Water	06/26/2022 11:15	06/27/2022 19:00	CBC	Collected By Client
3250320014	MW-39	Ground Water	06/26/2022 11:30	06/27/2022 19:00	CBC	Collected By Client
3250320015	MW-18	Ground Water	06/26/2022 11:50	06/27/2022 19:00	CBC	Collected By Client
3250320016	MW-40D	Ground Water	06/26/2022 12:00	06/27/2022 19:00	CBC	Collected By Client
3250320017	MW-38R	Ground Water	06/26/2022 14:10	06/27/2022 19:00	CBC	Collected By Client
3250320018	MW-05R	Ground Water	06/26/2022 14:20	06/27/2022 19:00	CBC	Collected By Client
3250320019	MW-44	Ground Water	06/26/2022 14:35	06/27/2022 19:00	CBC	Collected By Client
3250320020	MW-21D	Ground Water	06/26/2022 14:40	06/27/2022 19:00	CBC	Collected By Client
3250320021	RW-1S	Ground Water	06/26/2022 13:15	06/27/2022 19:00	CBC	Collected By Client
3250320022	RW-2S	Ground Water	06/26/2022 13:20	06/27/2022 19:00	CBC	Collected By Client
3250320023	RW-3S	Ground Water	06/26/2022 13:25	06/27/2022 19:00	CBC	Collected By Client
3250320024	RW-1D	Ground Water	06/26/2022 13:35	06/27/2022 19:00	CBC	Collected By Client
3250320025	RW-2D	Ground Water	06/26/2022 13:40	06/27/2022 19:00	CBC	Collected By Client
3250320026	Trip Blank	Ground Water	06/26/2022 00:00	06/27/2022 19:00	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The surrogate 2-Methylnapthalene-d10 for method SW846 8270E SIM was outside of control limits in the method blankk associated with this sample. The % Recovery was reported as 26.9 and the control limits were 29 to 112. This result was reported at a dilution of 1.
2	The Method Blank for method SW846 8270E SIM reported a value greater than the reporting level for the analyte 1,4-Dioxane. The concentration was
3	The QC sample type MS for method SW846 8260D was outside the control limits for the analyte Bromochloromethane. The % Recovery was reported as 120 and the control limits were 73 to 117.

Detected Results Summary

Client Sample ID **MW-41D**
Lab Sample ID **3250320001**

Collected **06/26/2022 14:55**
Lab Receipt **06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	0.62	ug/L	0.10	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID **MW-01**
Lab Sample ID **3250320002**

Collected **06/26/2022 15:05**
Lab Receipt **06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	0.23	ug/L	0.10	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID	**MW-01D**	Collected	**06/26/2022 15:10**
Lab Sample ID	**3250320003**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	4.0	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1.3	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	3.1	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	19.1	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-22D**	Collected	**06/26/2022 15:25**
Lab Sample ID	**3250320004**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	1.6	ug/L	0.13	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethene	9.0	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-04**	Collected	**06/26/2022 15:40**
Lab Sample ID	**3250320005**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	86.8	ug/L	2.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1.8	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	173	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	339	ug/L	5.0	SW846 8260D	#
1,2-Dichloroethane	3.1	ug/L	1.0	SW846 8260D	#
Trichloroethene	3.0	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-20**	Collected	**06/26/2022 15:50**
Lab Sample ID	**3250320006**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	377	ug/L	40.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,2-Trichloroethane	2.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	294	ug/L	5.0	SW846 8260D	#
1,1-Dichloroethene	426	ug/L	5.0	SW846 8260D	#
1,2-Dichloroethane	10.8	ug/L	1.0	SW846 8260D	#
cis-1,2-Dichloroethene	2.9	ug/L	1.0	SW846 8260D	#
Trichloroethene	2.7	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-09**	Collected	**06/26/2022 16:05**
Lab Sample ID	**3250320007**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	4.5	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethane	3.0	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	57.7	ug/L	1.0	SW846 8260D	#
Chloroform	2.4	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-23D**	Collected	**06/26/2022 16:15**
Lab Sample ID	**3250320008**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	27.0	ug/L	0.50	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	10.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	34.6	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	138	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.5	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-46D**	Collected	**06/26/2022 16:30**
Lab Sample ID	**3250320009**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	23.4	ug/L	0.25	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	5.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	20.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	92.4	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.0	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-16	Collected	06/26/2022 17:00
Lab Sample ID	3250320010	Lab Receipt	06/27/2022 19:00

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	26.4	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1610	ug/L	20.0	SW846 8260D	#
1,1-Dichloroethane	1030	ug/L	20.0	SW846 8260D	#
1,1-Dichloroethene	1210	ug/L	20.0	SW846 8260D	#
Acetone	86.1	ug/L	10.0	SW846 8260D	#
Chloroethane	42.6	ug/L	1.0	SW846 8260D	#
Ethylbenzene	1.4	ug/L	1.0	SW846 8260D	#
Methylene Chloride	1.4	ug/L	1.0	SW846 8260D	#
mp-Xylene	4.7	ug/L	2.0	SW846 8260D	#
o-Xylene	2.1	ug/L	1.0	SW846 8260D	#
Tetrachloroethene	5.5	ug/L	1.0	SW846 8260D	#
Total Xylenes	6.8	ug/L	3.0	SW846 8260D	#
Trichloroethene	13.8	ug/L	1.0	SW846 8260D	#
Vinyl Chloride	2.3	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-27D**	Collected	**06/26/2022 11:05**
Lab Sample ID	**3250320012**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	0.13	ug/L	0.13	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID	MW-43	Collected	06/26/2022 11:15
Lab Sample ID	3250320013	Lab Receipt	06/27/2022 19:00

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	7.0	ug/L	0.13	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethane	2.5	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	29.4	ug/L	1.0	SW846 8260D	#
Methyl t-Butyl Ether	2.9	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-39**	Collected	**06/26/2022 11:30**
Lab Sample ID	**3250320014**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	0.22	ug/L	0.14	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID	**MW-40D**	Collected	**06/26/2022 12:00**
Lab Sample ID	**3250320016**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	0.18	ug/L	0.18	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID	**MW-38R**	Collected	**06/26/2022 14:10**
Lab Sample ID	**3250320017**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	14.4	ug/L	0.25	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethane	7.6	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-05R**	Collected	**06/26/2022 14:20**
Lab Sample ID	**3250320018**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	0.96	ug/L	0.25	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1.2	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-44	Collected	06/26/2022 14:35
Lab Sample ID	3250320019	Lab Receipt	06/27/2022 19:00

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	2.5	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	5.9	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	2.3	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	3.2	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**MW-21D**	Collected	**06/26/2022 14:40**
Lab Sample ID	**3250320020**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	4.2	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethene	24.5	ug/L	1.0	SW846 8260D	#
Methyl t-Butyl Ether	1.1	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**RW-1S**	Collected	**06/26/2022 13:15**
Lab Sample ID	**3250320021**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	136	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	75.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	144	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	537	ug/L	10.0	SW846 8260D	#
1,2-Dichloroethane	2.4	ug/L	1.0	SW846 8260D	#
Chloroethane	17.9	ug/L	1.0	SW846 8260D	#
cis-1,2-Dichloroethene	2.9	ug/L	1.0	SW846 8260D	#
Trichloroethene	3.7	ug/L	1.0	SW846 8260D	#
Vinyl Chloride	5.3	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**RW-2S**	Collected	**06/26/2022 13:20**
Lab Sample ID	**3250320022**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	276	ug/L	5.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	800	ug/L	10.0	SW846 8260D	#
1,1-Dichloroethane	133	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	726	ug/L	10.0	SW846 8260D	#
Methylene Chloride	10.3	ug/L	1.0	SW846 8260D	#
Toluene	3.2	ug/L	1.0	SW846 8260D	#
Trichloroethene	9.8	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**RW-3S**	Collected	**06/26/2022 13:25**
Lab Sample ID	**3250320023**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	5.9	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	7.8	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	3.1	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	5.8	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	**RW-1D**	Collected	**06/26/2022 13:35**
Lab Sample ID	**3250320024**	Lab Receipt	**06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	36.2	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	8.3	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	59.9	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	242	ug/L	5.0	SW846 8260D	#
1,2-Dichloroethane	1.7	ug/L	1.0	SW846 8260D	#
Chloroethane	6.2	ug/L	1.0	SW846 8260D	#
cis-1,2-Dichloroethene	2.3	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID **RW-2D**
Lab Sample ID **3250320025**

Collected **06/26/2022 13:40**
Lab Receipt **06/27/2022 19:00**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	39.2	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	5.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	27.1	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	125	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.3	ug/L	1.0	SW846 8260D	#

Results

Client Sample ID	**MW-41D**	Collected	**06/26/2022 14:55**
Lab Sample ID	**3250320001**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.62	2	ug/L	0.10	SW846 8270E SIM	1	06/30/2022 14:30	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	42.4%	29 – 112	06/30/2022 14:30	1
Fluoranthene-d10	93951-69-0	76.1%	45 – 130	06/30/2022 14:30	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C

Results

Client Sample ID	**MW-41D**	Collected	**06/26/2022 14:55**
Lab Sample ID	**3250320001**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:28	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:28	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	07/02/2022 11:28	
4-Bromofluorobenzene	460-00-4	99.4%	79 – 114	07/02/2022 11:28	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/02/2022 11:28	
Toluene-d8	2037-26-5	102%	76 – 127	07/02/2022 11:28	

Results

Client Sample ID	**MW-01**	Collected	**06/26/2022 15:05**
Lab Sample ID	**3250320002**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.23	2	ug/L	0.10	SW846 8270E SIM	1	06/30/2022 15:00	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	44.6%	29 – 112	06/30/2022 15:00	1
Fluoranthene-d10	93951-69-0	75%	45 – 130	06/30/2022 15:00	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C

Results

Client Sample ID	**MW-01**	Collected	**06/26/2022 15:05**
Lab Sample ID	**3250320002**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 11:50	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 11:50	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	62 – 133	07/02/2022 11:50	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	07/02/2022 11:50	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/02/2022 11:50	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 11:50	

Results

Client Sample ID	**MW-01D**	Collected	**06/26/2022 15:10**
Lab Sample ID	**3250320003**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	4.0	2	ug/L	0.10	SW846 8270E SIM	1	06/30/2022 15:29	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	42%	29 – 112	06/30/2022 15:29	1
Fluoranthene-d10	93951-69-0	67.4%	45 – 130	06/30/2022 15:29	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,1,1-Trichloroethane	1.3		ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,1-Dichloroethane	3.1		ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,1-Dichloroethene	19.1		ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C

Results

Client Sample ID	**MW-01D**	Collected	**06/26/2022 15:10**
Lab Sample ID	**3250320003**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:13	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:13	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	07/02/2022 12:13	
4-Bromofluorobenzene	460-00-4	100%	79 – 114	07/02/2022 12:13	
Dibromofluoromethane	1868-53-7	102%	78 – 116	07/02/2022 12:13	
Toluene-d8	2037-26-5	102%	76 – 127	07/02/2022 12:13	

Results

Client Sample ID	**MW-22D**	Collected	**06/26/2022 15:25**
Lab Sample ID	**3250320004**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.6	2	ug/L	0.13	SW846 8270E SIM	1	06/30/2022 15:58	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	38.4%	29 – 112	06/30/2022 15:58	1
Fluoranthene-d10	93951-69-0	69.9%	45 – 130	06/30/2022 15:58	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,1-Dichloroethene	9.0		ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C

Results

Client Sample ID	**MW-22D**	Collected	**06/26/2022 15:25**
Lab Sample ID	**3250320004**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:35	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:35	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	07/02/2022 12:35	
4-Bromofluorobenzene	460-00-4	100%	79 – 114	07/02/2022 12:35	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/02/2022 12:35	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 12:35	

Results

Client Sample ID	MW-04	Collected	06/26/2022 15:40
Lab Sample ID	3250320005	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	86.8	2	ug/L	2.0	SW846 8270E SIM	4	07/05/2022 10:23	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	51.3%	29 – 112	07/05/2022 10:23	1
2-Methylnapthalene-d10	7297-45-2	52.6%	29 – 112	06/30/2022 16:27	1
Fluoranthene-d10	93951-69-0	68.5%	45 – 130	07/05/2022 10:23	
Fluoranthene-d10	93951-69-0	65.6%	45 – 130	06/30/2022 16:27	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,1,1-Trichloroethane	1.8		ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,1-Dichloroethane	173		ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,1-Dichloroethene	339		ug/L	5.0	SW846 8260D	5	07/05/2022 16:17	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2-Dichloroethane	3.1		ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C

Results

Client Sample ID	MW-04	Collected	06/26/2022 15:40
Lab Sample ID	3250320005	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Trichloroethene	3.0		ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 12:57	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 12:57	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	62 – 133	07/05/2022 16:17	
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	07/02/2022 12:57	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	07/05/2022 16:17	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	07/02/2022 12:57	
Dibromofluoromethane	1868-53-7	108%	78 – 116	07/05/2022 16:17	
Dibromofluoromethane	1868-53-7	103%	78 – 116	07/02/2022 12:57	
Toluene-d8	2037-26-5	102%	76 – 127	07/05/2022 16:17	
Toluene-d8	2037-26-5	102%	76 – 127	07/02/2022 12:57	

Results

Client Sample ID	**MW-20**	Collected	**06/26/2022 15:50**
Lab Sample ID	**3250320006**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	377	2	ug/L	40.0	SW846 8270E SIM	400	07/06/2022 14:22	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	0*%	29 – 112	07/06/2022 14:22	1
2-Methylnapthalene-d10	7297-45-2	44.5%	29 – 112	06/30/2022 16:56	1
Fluoranthene-d10	93951-69-0	0*%	45 – 130	07/06/2022 14:22	
Fluoranthene-d10	93951-69-0	73%	45 – 130	06/30/2022 16:56	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,1,2-Trichloroethane	2.7		ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,1-Dichloroethane	294		ug/L	5.0	SW846 8260D	5	07/05/2022 16:40	TMP	C
1,1-Dichloroethene	426		ug/L	5.0	SW846 8260D	5	07/05/2022 16:40	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2-Dichloroethane	10.8		ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C

Results

Client Sample ID	MW-20	Collected	06/26/2022 15:50
Lab Sample ID	3250320006	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
cis-1,2-Dichloroethene	2.9		ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Trichloroethene	2.7		ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:20	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:20	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.3%	62 – 133	07/05/2022 16:40	
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	07/02/2022 13:20	
4-Bromofluorobenzene	460-00-4	109%	79 – 114	07/05/2022 16:40	
4-Bromofluorobenzene	460-00-4	99.4%	79 – 114	07/02/2022 13:20	
Dibromofluoromethane	1868-53-7	106%	78 – 116	07/05/2022 16:40	
Dibromofluoromethane	1868-53-7	105%	78 – 116	07/02/2022 13:20	
Toluene-d8	2037-26-5	102%	76 – 127	07/05/2022 16:40	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 13:20	

Results

Client Sample ID	MW-09	Collected	06/26/2022 16:05
Lab Sample ID	3250320007	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	4.5	2	ug/L	0.10	SW846 8270E SIM	1	06/30/2022 17:25	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	40.4%	29 – 112	06/30/2022 17:25	1
Fluoranthene-d10	93951-69-0	75.2%	45 – 130	06/30/2022 17:25	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,1-Dichloroethane	3.0		ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,1-Dichloroethene	57.7		ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Chloroform	2.4		ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C

Results

Client Sample ID	**MW-09**	Collected	**06/26/2022 16:05**
Lab Sample ID	**3250320007**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 13:42	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 13:42	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	07/02/2022 13:42	
4-Bromofluorobenzene	460-00-4	99.3%	79 – 114	07/02/2022 13:42	
Dibromofluoromethane	1868-53-7	103%	78 – 116	07/02/2022 13:42	
Toluene-d8	2037-26-5	104%	76 – 127	07/02/2022 13:42	

Results

Client Sample ID	**MW-23D**	Collected	**06/26/2022 16:15**
Lab Sample ID	**3250320008**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	27.0	2	ug/L	0.50	SW846 8270E SIM	1	06/30/2022 17:54	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	51.2%	29 – 112	06/30/2022 17:54	1
Fluoranthene-d10	93951-69-0	72.4%	45 – 130	06/30/2022 17:54	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,1,1-Trichloroethane	10.7		ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,1-Dichloroethane	34.6		ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,1-Dichloroethene	138		ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2-Dichloroethane	1.5		ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C

Results

Client Sample ID	**MW-23D**	Collected	**06/26/2022 16:15**
Lab Sample ID	**3250320008**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:04	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:04	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	62 – 133	07/02/2022 14:04	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	07/02/2022 14:04	
Dibromofluoromethane	1868-53-7	102%	78 – 116	07/02/2022 14:04	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 14:04	

Results

Client Sample ID	**MW-46D**	Collected	**06/26/2022 16:30**
Lab Sample ID	**3250320009**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	23.4	2	ug/L	0.25	SW846 8270E SIM	1	06/30/2022 18:23	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	43.2%	29 – 112	06/30/2022 18:23	1
Fluoranthene-d10	93951-69-0	58.8%	45 – 130	06/30/2022 18:23	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,1,1-Trichloroethane	5.7		ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,1-Dichloroethane	20.7		ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,1-Dichloroethene	92.4		ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2-Dichloroethane	1.0		ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C

Results

Client Sample ID	**MW-46D**	Collected	**06/26/2022 16:30**
Lab Sample ID	**3250320009**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:26	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:26	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	07/02/2022 14:26	
4-Bromofluorobenzene	460-00-4	98.6%	79 – 114	07/02/2022 14:26	
Dibromofluoromethane	1868-53-7	99.6%	78 – 116	07/02/2022 14:26	
Toluene-d8	2037-26-5	101%	76 – 127	07/02/2022 14:26	

Results

Client Sample ID	MW-16	Collected	06/26/2022 17:00
Lab Sample ID	3250320010	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	26.4	2	ug/L	1.0	SW846 8270E SIM	10	07/05/2022 11:18	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	54.2%	29 – 112	07/05/2022 11:18	1
2-Methylnapthalene-d10	7297-45-2	44.3%	29 – 112	06/30/2022 18:52	1
Fluoranthene-d10	93951-69-0	80.7%	45 – 130	07/05/2022 11:18	
Fluoranthene-d10	93951-69-0	79.7%	45 – 130	06/30/2022 18:52	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,1,1-Trichloroethane	1610		ug/L	20.0	SW846 8260D	20	07/07/2022 03:08	PDK	D
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,1-Dichloroethane	1030		ug/L	20.0	SW846 8260D	20	07/07/2022 03:08	PDK	D
1,1-Dichloroethene	1210		ug/L	20.0	SW846 8260D	20	07/07/2022 03:08	PDK	D
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Acetone	86.1		ug/L	10.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Chloroethane	42.6		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C

Results

Client Sample ID	MW-16	Collected	06/26/2022 17:00
Lab Sample ID	3250320010	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Ethylbenzene	1.4		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Methylene Chloride	1.4		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
mp-Xylene	4.7		ug/L	2.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
o-Xylene	2.1		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Tetrachloroethene	5.5		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Total Xylenes	6.8		ug/L	3.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Trichloroethene	13.8		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 14:49	TMP	C
Vinyl Chloride	2.3		ug/L	1.0	SW846 8260D	1	07/02/2022 14:49	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.4%	62 – 133	07/07/2022 03:08	
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	07/02/2022 14:49	
4-Bromofluorobenzene	460-00-4	97.5%	79 – 114	07/07/2022 03:08	
4-Bromofluorobenzene	460-00-4	99.7%	79 – 114	07/02/2022 14:49	
Dibromofluoromethane	1868-53-7	92.8%	78 – 116	07/07/2022 03:08	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/02/2022 14:49	
Toluene-d8	2037-26-5	95.2%	76 – 127	07/07/2022 03:08	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 14:49	

Results

Client Sample ID	MW-03	Collected	06/26/2022 10:45
Lab Sample ID	3250320011	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.50 U	U,2	ug/L	0.50	SW846 8270E SIM	1	06/30/2022 19:21	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	37.1%	29 – 112	06/30/2022 19:21	1
Fluoranthene-d10	93951-69-0	66.2%	45 – 130	06/30/2022 19:21	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C

Results

Client Sample ID	MW-03	Collected	06/26/2022 10:45
Lab Sample ID	3250320011	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:11	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:11	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.8%	62 – 133	07/02/2022 15:11	
4-Bromofluorobenzene	460-00-4	100%	79 – 114	07/02/2022 15:11	
Dibromofluoromethane	1868-53-7	103%	78 – 116	07/02/2022 15:11	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 15:11	

Results

Client Sample ID	**MW-27D**	Collected	**06/26/2022 11:05**
Lab Sample ID	**3250320012**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.13	2	ug/L	0.13	SW846 8270E SIM	1	06/30/2022 19:49	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	44.3%	29 – 112	06/30/2022 19:49	1
Fluoranthene-d10	93951-69-0	74.4%	45 – 130	06/30/2022 19:49	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Bromochloromethane	1.0 U	U,3	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C

Results

Client Sample ID	**MW-27D**	Collected	**06/26/2022 11:05**
Lab Sample ID	**3250320012**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:34	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:34	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	07/02/2022 15:34	
4-Bromofluorobenzene	460-00-4	99.6%	79 – 114	07/02/2022 15:34	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/02/2022 15:34	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 15:34	

Results

Client Sample ID	MW-43	Collected	06/26/2022 11:15
Lab Sample ID	3250320013	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	7.0	2	ug/L	0.13	SW846 8270E SIM	1	06/30/2022 20:19	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	39.8%	29 – 112	06/30/2022 20:19	1
Fluoranthene-d10	93951-69-0	68.9%	45 – 130	06/30/2022 20:19	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,1-Dichloroethane	2.5		ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,1-Dichloroethene	29.4		ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C

Results

Client Sample ID	MW-43	Collected	06/26/2022 11:15
Lab Sample ID	3250320013	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Methyl t-Butyl Ether	2.9		ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 15:56	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 15:56	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	07/02/2022 15:56	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	07/02/2022 15:56	
Dibromofluoromethane	1868-53-7	102%	78 – 116	07/02/2022 15:56	
Toluene-d8	2037-26-5	105%	76 – 127	07/02/2022 15:56	

Results

Client Sample ID	MW-39	Collected	06/26/2022 11:30
Lab Sample ID	3250320014	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.22	2	ug/L	0.14	SW846 8270E SIM	1	06/30/2022 20:48	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	37.2%	29 – 112	06/30/2022 20:48	1
Fluoranthene-d10	93951-69-0	73%	45 – 130	06/30/2022 20:48	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C

Results

Client Sample ID	MW-39	Collected	06/26/2022 11:30
Lab Sample ID	3250320014	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:18	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:18	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	07/02/2022 16:18	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	07/02/2022 16:18	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/02/2022 16:18	
Toluene-d8	2037-26-5	105%	76 – 127	07/02/2022 16:18	

Results

Client Sample ID	**MW-18**	Collected	**06/26/2022 11:50**
Lab Sample ID	**3250320015**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.10 U	U,2	ug/L	0.10	SW846 8270E SIM	1	06/30/2022 21:17	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	35.4%	29 – 112	06/30/2022 21:17	1
Fluoranthene-d10	93951-69-0	75.5%	45 – 130	06/30/2022 21:17	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C

Results

Client Sample ID	MW-18	Collected	06/26/2022 11:50
Lab Sample ID	3250320015	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 16:41	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 16:41	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	62 – 133	07/02/2022 16:41	
4-Bromofluorobenzene	460-00-4	99.9%	79 – 114	07/02/2022 16:41	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/02/2022 16:41	
Toluene-d8	2037-26-5	102%	76 – 127	07/02/2022 16:41	

Results

Client Sample ID	**MW-40D**	Collected	**06/26/2022 12:00**
Lab Sample ID	**3250320016**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.18	2	ug/L	0.18	SW846 8270E SIM	1	06/30/2022 21:46	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	46%	29 – 112	06/30/2022 21:46	1
Fluoranthene-d10	93951-69-0	78.1%	45 – 130	06/30/2022 21:46	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C

Results

Client Sample ID	**MW-40D**	Collected	**06/26/2022 12:00**
Lab Sample ID	**3250320016**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:03	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:03	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	62 – 133	07/02/2022 17:03	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	07/02/2022 17:03	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/02/2022 17:03	
Toluene-d8	2037-26-5	102%	76 – 127	07/02/2022 17:03	

Results

Client Sample ID	**MW-38R**	Collected	**06/26/2022 14:10**
Lab Sample ID	**3250320017**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	14.4	2	ug/L	0.25	SW846 8270E SIM	1	06/30/2022 22:15	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	47.2%	29 – 112	06/30/2022 22:15	1
Fluoranthene-d10	93951-69-0	82.8%	45 – 130	06/30/2022 22:15	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,1-Dichloroethane	7.6		ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C

Results

Client Sample ID	**MW-38R**	Collected	**06/26/2022 14:10**
Lab Sample ID	**3250320017**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:25	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:25	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	07/02/2022 17:25	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	07/02/2022 17:25	
Dibromofluoromethane	1868-53-7	103%	78 – 116	07/02/2022 17:25	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 17:25	

Results

Client Sample ID	**MW-05R**	Collected	**06/26/2022 14:20**
Lab Sample ID	**3250320018**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	0.96	2	ug/L	0.25	SW846 8270E SIM	1	07/01/2022 20:48	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	43%	29 – 112	07/01/2022 20:48	1
Fluoranthene-d10	93951-69-0	59.5%	45 – 130	07/01/2022 20:48	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,1,1-Trichloroethane	1.2		ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C

Results

Client Sample ID	MW-05R	Collected	06/26/2022 14:20
Lab Sample ID	3250320018	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/02/2022 17:47	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/02/2022 17:47	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	07/02/2022 17:47	
4-Bromofluorobenzene	460-00-4	100%	79 – 114	07/02/2022 17:47	
Dibromofluoromethane	1868-53-7	105%	78 – 116	07/02/2022 17:47	
Toluene-d8	2037-26-5	103%	76 – 127	07/02/2022 17:47	

Results

Client Sample ID	MW-44	Collected	06/26/2022 14:35
Lab Sample ID	3250320019	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	2.5	2	ug/L	0.10	SW846 8270E SIM	1	07/01/2022 21:16	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	45%	29 – 112	07/01/2022 21:16	1
Fluoranthene-d10	93951-69-0	83.3%	45 – 130	07/01/2022 21:16	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,1,1-Trichloroethane	5.9		ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,1-Dichloroethane	2.3		ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,1-Dichloroethene	3.2		ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C

Results

Client Sample ID	MW-44	Collected	06/26/2022 14:35
Lab Sample ID	3250320019	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:25	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:25	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	62 – 133	07/05/2022 17:25	
4-Bromofluorobenzene	460-00-4	108%	79 – 114	07/05/2022 17:25	
Dibromofluoromethane	1868-53-7	109%	78 – 116	07/05/2022 17:25	
Toluene-d8	2037-26-5	101%	76 – 127	07/05/2022 17:25	

Results

Client Sample ID	**MW-21D**	Collected	**06/26/2022 14:40**
Lab Sample ID	**3250320020**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	4.2	2	ug/L	0.10	SW846 8270E SIM	1	07/05/2022 09:54	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	36.5%	29 – 112	07/05/2022 09:54	1
Fluoranthene-d10	93951-69-0	79.4%	45 – 130	07/05/2022 09:54	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,1-Dichloroethene	24.5		ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C

Results

Client Sample ID	**MW-21D**	Collected	**06/26/2022 14:40**
Lab Sample ID	**3250320020**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Methyl t-Butyl Ether	1.1		ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 17:48	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 17:48	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	62 – 133	07/05/2022 17:48	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	07/05/2022 17:48	
Dibromofluoromethane	1868-53-7	108%	78 – 116	07/05/2022 17:48	
Toluene-d8	2037-26-5	101%	76 – 127	07/05/2022 17:48	

Results

Client Sample ID	RW-1S	Collected	06/26/2022 13:15
Lab Sample ID	3250320021	Lab Receipt	06/27/2022 19:00

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	136	2	ug/L	0.10	SW846 8270E SIM	1	07/01/2022 16:13	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	58.6%	29 – 112	07/01/2022 16:13	
Fluoranthene-d10	93951-69-0	85.3%	45 – 130	07/01/2022 16:13	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,1,1-Trichloroethane	75.4		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,1-Dichloroethane	144		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,1-Dichloroethene	537		ug/L	10.0	SW846 8260D	10	07/07/2022 02:23	PDK	D
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2-Dichloroethane	2.4		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Chloroethane	17.9		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C

Results

Client Sample ID	RW-1S	Collected	06/26/2022 13:15
Lab Sample ID	3250320021	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	2.9		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Trichloroethene	3.7		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:11	TMP	C
Vinyl Chloride	5.3		ug/L	1.0	SW846 8260D	1	07/05/2022 18:11	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	62 – 133	07/05/2022 18:11	
1,2-Dichloroethane-d4	17060-07-0	92.3%	62 – 133	07/07/2022 02:23	
4-Bromofluorobenzene	460-00-4	111%	79 – 114	07/05/2022 18:11	
4-Bromofluorobenzene	460-00-4	97.5%	79 – 114	07/07/2022 02:23	
Dibromofluoromethane	1868-53-7	107%	78 – 116	07/05/2022 18:11	
Dibromofluoromethane	1868-53-7	93.5%	78 – 116	07/07/2022 02:23	
Toluene-d8	2037-26-5	103%	76 – 127	07/05/2022 18:11	
Toluene-d8	2037-26-5	95%	76 – 127	07/07/2022 02:23	

Results

Client Sample ID	**RW-2S**	Collected	**06/26/2022 13:20**
Lab Sample ID	**3250320022**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	276	2	ug/L	5.0	SW846 8270E SIM	50	07/08/2022 16:39	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	57.6%	29 – 112	07/08/2022 16:39	
2-Methylnapthalene-d10	7297-45-2	46%	29 – 112	07/01/2022 16:41	
Fluoranthene-d10	93951-69-0	74.2%	45 – 130	07/08/2022 16:39	
Fluoranthene-d10	93951-69-0	71.5%	45 – 130	07/01/2022 16:41	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,1,1-Trichloroethane	800		ug/L	10.0	SW846 8260D	10	07/07/2022 02:46	PDK	D
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,1-Dichloroethane	133		ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,1-Dichloroethene	726		ug/L	10.0	SW846 8260D	10	07/07/2022 02:46	PDK	D
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C

Results

Client Sample ID	RW-2S	Collected	06/26/2022 13:20
Lab Sample ID	3250320022	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Methylene Chloride	10.3		ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Toluene	3.2		ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Trichloroethene	9.8		ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:33	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:33	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	90.2%	62 – 133	07/07/2022 02:46	
1,2-Dichloroethane-d4	17060-07-0	101%	62 – 133	07/05/2022 18:33	
4-Bromofluorobenzene	460-00-4	98.7%	79 – 114	07/07/2022 02:46	
4-Bromofluorobenzene	460-00-4	112%	79 – 114	07/05/2022 18:33	
Dibromofluoromethane	1868-53-7	91%	78 – 116	07/07/2022 02:46	
Dibromofluoromethane	1868-53-7	108%	78 – 116	07/05/2022 18:33	
Toluene-d8	2037-26-5	93.6%	76 – 127	07/07/2022 02:46	
Toluene-d8	2037-26-5	103%	76 – 127	07/05/2022 18:33	

Results

Client Sample ID **RW-3S** Collected **06/26/2022 13:25**
Lab Sample ID **3250320023** Lab Receipt **06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	5.9	2	ug/L	0.10	SW846 8270E SIM	1	07/01/2022 17:08	GEC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	53.7%	29 – 112	07/01/2022 17:08	
Fluoranthene-d10	93951-69-0	91.5%	45 – 130	07/01/2022 17:08	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,1,1-Trichloroethane	7.8		ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,1-Dichloroethane	3.1		ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,1-Dichloroethene	5.8		ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C

Results

Client Sample ID	RW-3S	Collected	06/26/2022 13:25
Lab Sample ID	3250320023	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 18:56	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 18:56	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	62 – 133	07/05/2022 18:56	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	07/05/2022 18:56	
Dibromofluoromethane	1868-53-7	108%	78 – 116	07/05/2022 18:56	
Toluene-d8	2037-26-5	101%	76 – 127	07/05/2022 18:56	

Results

Client Sample ID	**RW-1D**	Collected	**06/26/2022 13:35**
Lab Sample ID	**3250320024**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	36.2	2	ug/L	1.0	SW846 8270E SIM	10	07/08/2022 15:45	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	53%	29 – 112	07/08/2022 15:45	
2-Methylnapthalene-d10	7297-45-2	70.3%	29 – 112	07/01/2022 17:36	
Fluoranthene-d10	93951-69-0	78.7%	45 – 130	07/08/2022 15:45	
Fluoranthene-d10	93951-69-0	114%	45 – 130	07/01/2022 17:36	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,1,1-Trichloroethane	8.3		ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,1-Dichloroethane	59.9		ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,1-Dichloroethene	242		ug/L	5.0	SW846 8260D	5	07/07/2022 02:01	PDK	D
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2-Dichloroethane	1.7		ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Chloroethane	6.2		ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C

Results

Client Sample ID	RW-1D	Collected	06/26/2022 13:35
Lab Sample ID	3250320024	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
cis-1,2-Dichloroethene	2.3		ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:18	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:18	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.7%	62 – 133	07/07/2022 02:01	
1,2-Dichloroethane-d4	17060-07-0	102%	62 – 133	07/05/2022 19:18	
4-Bromofluorobenzene	460-00-4	99.1%	79 – 114	07/07/2022 02:01	
4-Bromofluorobenzene	460-00-4	109%	79 – 114	07/05/2022 19:18	
Dibromofluoromethane	1868-53-7	93.9%	78 – 116	07/07/2022 02:01	
Dibromofluoromethane	1868-53-7	109%	78 – 116	07/05/2022 19:18	
Toluene-d8	2037-26-5	93.7%	76 – 127	07/07/2022 02:01	
Toluene-d8	2037-26-5	103%	76 – 127	07/05/2022 19:18	

Results

Client Sample ID	**RW-2D**	Collected	**06/26/2022 13:40**
Lab Sample ID	**3250320025**	Lab Receipt	**06/27/2022 19:00**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	39.2	2	ug/L	1.0	SW846 8270E SIM	10	07/08/2022 16:12	EXD	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	47.2%	29 – 112	07/08/2022 16:12	
2-Methylnapthalene-d10	7297-45-2	51.8%	29 – 112	07/01/2022 18:03	
Fluoranthene-d10	93951-69-0	70.3%	45 – 130	07/08/2022 16:12	
Fluoranthene-d10	93951-69-0	88.4%	45 – 130	07/01/2022 18:03	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,1,1-Trichloroethane	5.4		ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,1-Dichloroethane	27.1		ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,1-Dichloroethene	125		ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2-Dichloroethane	1.3		ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C

Results

Client Sample ID	RW-2D	Collected	06/26/2022 13:40
Lab Sample ID	3250320025	Lab Receipt	06/27/2022 19:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/05/2022 19:41	TMP	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/05/2022 19:41	TMP	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	62 – 133	07/05/2022 19:41	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	07/05/2022 19:41	
Dibromofluoromethane	1868-53-7	109%	78 – 116	07/05/2022 19:41	
Toluene-d8	2037-26-5	102%	76 – 127	07/05/2022 19:41	

Results

Client Sample ID	**Trip Blank**	Collected	**06/26/2022 00:00**
Lab Sample ID	**3250320026**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A

Results

Client Sample ID	**Trip Blank**	Collected	**06/26/2022 00:00**
Lab Sample ID	**3250320026**	Lab Receipt	**06/27/2022 19:00**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/07/2022 01:39	PDK	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/07/2022 01:39	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	90.2%	62 – 133	07/07/2022 01:39	
4-Bromofluorobenzene	460-00-4	95.4%	79 – 114	07/07/2022 01:39	
Dibromofluoromethane	1868-53-7	91.9%	78 – 116	07/07/2022 01:39	
Toluene-d8	2037-26-5	94.1%	76 – 127	07/07/2022 01:39	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3250320001	MW-41D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320002	MW-01	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320003	MW-01D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320004	MW-22D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320005	MW-04	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3250320006	MW-20	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3250320007	MW-09	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320008	MW-23D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320009	MW-46D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320010	MW-16	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3250320011	MW-03	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320012	MW-27D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320013	MW-43	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320014	MW-39	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320015	MW-18	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320016	MW-40D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320017	MW-38R	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320018	MW-05R	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320019	MW-44	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320020	MW-21D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320021	RW-1S	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3250320022	RW-2S	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3250320023	RW-3S	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320024	RW-1D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3250320025	RW-2D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3250320026	Trip Blank	SW846 8260D	N/A	

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM

QC Batch

QC Batch	860123	Prep Method	SW846 3510C
Date	06/29/2022 15:05	Analysis Method	SW846 8270E SIM
Tech.	AJW		

Associated Samples

3250320001	3250320002	3250320003	3250320004
3250320005	3250320006	3250320007	3250320008
3250320009	3250320010	3250320011	3250320012
3250320013	3250320014	3250320015	3250320016
3250320017	3250320018	3250320019	3250320020

Method Blank 3523175 (MB) Created on 06/29/2022 13:16 For QC Batch 860123

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	0.79	ug/L	0.10	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.27	1	26.9*	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	0.52	1	52.5	45 - 130	

Lab Control Standard 3523176 (LCS) Created on 06/29/2022 13:16 For QC Batch 860123

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.55		1	54.9	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.51	1	50.8	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.76	1	76	45 - 130	

QC Batch

QC Batch	860299	Prep Method	SW846 3510C
Date	06/30/2022 10:10	Analysis Method	SW846 8270E SIM
Tech.	MXL		

Associated Samples

3250320021	3250320022	3250320023	3250320024
3250320025			

Method Blank 3523434 (MB) Created on 06/30/2022 06:30 For QC Batch 860299

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	0.17	ug/L	0.10	

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.54	1	54.4	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	0.87	1	86.7	45 - 130	

Lab Control Standard 3523435 (LCS) Created on 06/30/2022 06:30 For QC Batch 860299

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.56		1	55.8	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.44	1	43.8	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.80	1	80.2	45 - 130	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS

QC Batch

QC Batch	861178	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3250320001	3250320002	3250320003	3250320004
3250320005	3250320006	3250320007	3250320008
3250320009	3250320010	3250320011	3250320012
3250320013	3250320014	3250320015	3250320016
3250320017	3250320018		

Method Blank 3524528 (MB) Created on 07/02/2022 09:01 For QC Batch 861178

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	30.30	30	101	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	29.80	30	99.5	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	30.80	30	103	78 - 116	
Toluene-d8	2037-26-5	BLK	31.20	30	104	76 - 127	

Lab Control Standard 3524529 (LCS) Created on 07/02/2022 09:01 For QC Batch 861178

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	22		20	110	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	22.50		20	112	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	21.20		20	106	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	21.50		20	107	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	20.80		20	104	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	21.60		20	108	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	22.80		20	114	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	19.30		20	96.7	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	21.70		20	109	75 - 132		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2,4-Trichlorobenzene	120-82-1	LCS	18.70		20	93.4	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	18.30		20	91.6	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	18.50		20	92.6	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	20.30		20	102	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	20.90		20	104	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	20.90		20	104	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	20.80		20	104	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	21.40		20	107	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	20.70		20	104	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	22.80		20	114	64 - 129		
2-Butanone	78-93-3	LCS	108		100	108	50 - 152		
2-Hexanone	591-78-6	LCS	94		100	94	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	99.10		100	99.1	71 - 146		
Acetone	67-64-1	LCS	116		100	116	40 - 151		
Benzene	71-43-2	LCS	22		20	110	80 - 124		
Bromobenzene	108-86-1	LCS	22.10		20	111	81 - 119		
Bromochloromethane	74-97-5	LCS	22.50		20	113	73 - 117		
Bromodichloromethane	75-27-4	LCS	22.30		20	111	79 - 126		
Bromoform	75-25-2	LCS	18.90		20	94.3	70 - 123		
Bromomethane	74-83-9	LCS	20.10		20	101	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	22		20	110	62 - 132		
Chlorobenzene	108-90-7	LCS	20.90		20	104	85 - 117		
Chlorodibromomethane	124-48-1	LCS	18.40		20	91.9	77 - 122		
Chloroethane	75-00-3	LCS	22.40		20	112	51 - 142		
Chloroform	67-66-3	LCS	21.20		20	106	78 - 122		
Chloromethane	74-87-3	LCS	19.70		20	98.6	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	21.30		20	107	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	21.20		20	106	81 - 121		
Dibromomethane	74-95-3	LCS	22.60		20	113	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	20.20		20	101	17 - 166		
Diisopropyl ether	108-20-3	LCS	21		20	105	74 - 131		
Ethylbenzene	100-41-4	LCS	21.80		20	109	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	24.10		20	121	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	22		20	110	69 - 115		
Methylene Chloride	75-09-2	LCS	19.70		20	98.6	76 - 121		
mp-Xylene	108383/106423	LCS	45.20		40	113	79 - 125		
Naphthalene	91-20-3	LCS	18.10		20	90.5	56 - 134		
o-Chlorotoluene	95-49-8	LCS	20.60		20	103	78 - 126		
o-Xylene	95-47-6	LCS	21.40		20	107	79 - 124		
p-Chlorotoluene	106-43-4	LCS	20.70		20	104	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	22.30		20	111	72 - 123		
Styrene	100-42-5	LCS	19.20		20	96	79 - 123		
Tetrachloroethene	127-18-4	LCS	21.10		20	106	72 - 124		
Toluene	108-88-3	LCS	21.60		20	108	80 - 125		
Total Xylenes	1330-20-7	LCS	66.60		60	111	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	21		20	105	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	19.20		20	96.1	78 - 126		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Trichloroethene	79-01-6	LCS	21.10		20	106	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	23.10		20	116	38 - 123		
Vinyl Acetate	108-05-4	LCS	17.10		20	85.6	58 - 136		
Vinyl Chloride	75-01-4	LCS	21		20	105	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	31.50	30	105	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	29.20	30	97.5	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	31	30	103	78 - 116	
Toluene-d8	2037-26-5	LCS	30	30	100	76 - 127	

Matrix Spike 3524534 (MS) 3250320012 For QC Batch 861178

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3524535 (MSD) 3250320012 For QC Batch 861178

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	22.60	0	20	113	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	21.90	0	20	109	78 - 121	RPD 3.14 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	23.80	0	20	119	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	22.80	0	20	114	66 - 130	RPD 4.21 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	21.90	0	20	110	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.70	0	20	109	74 - 135	RPD 0.98 (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	22.10	0	20	110	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	21.50	0	20	108	82 - 126	RPD 2.55 (Max-15)	
1,1-Dichloroethane	75-34-3	MS	22.30	0	20	112	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	21.20	0	20	106	78 - 124	RPD 5.35 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	24	0	20	120	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	22.50	0	20	113	63 - 128	RPD 6.17 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	24.60	0	20	123	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	23.40	0	20	117	76 - 126	RPD 5.16 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	16.50	0	20	82.6	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	17.60	0	20	88	61 - 126	RPD 6.33 (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	22.60	0	20	113	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	22.60	0	20	113	75 - 132	RPD 0.31 (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	17.20	0	20	85.8	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	17.70	0	20	88.4	67 - 123	RPD 2.99 (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	17.50	0	20	87.5	59 - 133		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	18	0	20	90.1	59 - 133	RPD 2.96 (Max-26)	
1,2-Dibromoethane	106-93-4	MS	19	0	20	94.8	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	18.40	0	20	92.2	80 - 124	RPD 2.69 (Max-19)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dichlorobenzene	95-50-1	MS	20.80	0	20	104	82 - 118		
1,2-Dichlorobenzene	95-50-1	MSD	21	0	20	105	82 - 118	RPD 1.08 (Max-15)	
1,2-Dichloroethane	107-06-2	MS	22	0	20	110	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	22.10	0	20	110	70 - 133	RPD 0.09 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	22	0	20	110	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	21.30	0	20	106	81 - 127	RPD 3.32 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	20.90	0	20	104	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	20.70	0	20	103	81 - 118	RPD 0.84 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	22	0	20	110	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	21.40	0	20	107	82 - 126	RPD 3.03 (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	20.90	0	20	105	81 - 116		
1,4-Dichlorobenzene	106-46-7	MSD	20.80	0	20	104	81 - 116	RPD 0.41 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	20.30	0	20	101	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	19	0	20	95.2	64 - 129	RPD 6.35 (Max-18)	
2-Butanone	78-93-3	MS	93.50	0	100	93.5	50 - 152		
2-Butanone	78-93-3	MSD	99.90	0	100	99.9	50 - 152	RPD 6.54 (Max-16)	
2-Hexanone	591-78-6	MS	89.10	0	100	89.1	65 - 154		
2-Hexanone	591-78-6	MSD	87.20	0	100	87.2	65 - 154	RPD 2.17 (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	104	0	100	104	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	104	0	100	104	71 - 146	RPD 0.01 (Max-16)	
Acetone	67-64-1	MS	100	0	100	100	40 - 151		
Acetone	67-64-1	MSD	112	0	100	112	40 - 151	RPD 11.30 (Max-40)	
Benzene	71-43-2	MS	23.40	0	20	117	80 - 124		
Benzene	71-43-2	MSD	22.30	0	20	112	80 - 124	RPD 4.82 (Max-26)	
Bromobenzene	108-86-1	MS	22.90	0	20	115	81 - 119		
Bromobenzene	108-86-1	MSD	22.20	0	20	111	81 - 119	RPD 3.09 (Max-17)	
Bromochloromethane	74-97-5	MS	23.90	0	20	120*	73 - 117		
Bromochloromethane	74-97-5	MSD	23.30	0	20	116	73 - 117	RPD 2.71 (Max-19)	
Bromodichloromethane	75-27-4	MS	22.90	0	20	115	79 - 126		
Bromodichloromethane	75-27-4	MSD	22.50	0	20	112	79 - 126	RPD 2.05 (Max-16)	
Bromoform	75-25-2	MS	18.80	0	20	94.1	70 - 123		
Bromoform	75-25-2	MSD	18.70	0	20	93.6	70 - 123	RPD 0.52 (Max-16)	
Bromomethane	74-83-9	MS	21	0	20	105	45 - 148		
Bromomethane	74-83-9	MSD	17.30	0	20	86.7	45 - 148	RPD 19.20 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	24.10	0	20	120	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	23.10	0	20	116	62 - 132	RPD 3.86 (Max-17)	
Chlorobenzene	108-90-7	MS	21.70	0	20	109	85 - 117		
Chlorobenzene	108-90-7	MSD	20.70	0	20	103	85 - 117	RPD 4.91 (Max-15)	
Chlorodibromomethane	124-48-1	MS	18.30	0	20	91.4	77 - 122		
Chlorodibromomethane	124-48-1	MSD	17.70	0	20	88.7	77 - 122	RPD 2.97 (Max-15)	
Chloroethane	75-00-3	MS	23.10	0	20	116	51 - 142		
Chloroethane	75-00-3	MSD	21	0	20	105	51 - 142	RPD 9.55 (Max-24)	
Chloroform	67-66-3	MS	22.70	0	20	113	78 - 122		
Chloroform	67-66-3	MSD	22.20	0	20	111	78 - 122	RPD 2.12 (Max-16)	
Chloromethane	74-87-3	MS	21.80	0	20	109	38 - 156		
Chloromethane	74-87-3	MSD	20.40	0	20	102	38 - 156	RPD 6.64 (Max-27)	
cis-1,2-Dichloroethene	156-59-2	MS	22.50	0	20	113	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	21.70	0	20	109	78 - 125	RPD 3.61 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	21.30	0	20	107	81 - 121		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
cis-1,3-Dichloropropene	10061-01-5	MSD	20.30	0	20	101	81 - 121	RPD 5.16 (Max-16)	
Dibromomethane	74-95-3	MS	23.70	0	20	119	81 - 125		
Dibromomethane	74-95-3	MSD	22.70	0	20	114	81 - 125	RPD 4.14 (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	22	0	20	110	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	20.40	0	20	102	17 - 166	RPD 7.55 (Max-24)	
Diisopropyl ether	108-20-3	MS	22.20	0	20	111	74 - 131		
Diisopropyl ether	108-20-3	MSD	21.20	0	20	106	74 - 131	RPD 4.59 (Max-15)	
Ethylbenzene	100-41-4	MS	22.70	0	20	114	80 - 124		
Ethylbenzene	100-41-4	MSD	22	0	20	110	80 - 124	RPD 3.38 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	21.10	0	20	105	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	18.90	0	20	94.3	55 - 128	RPD 11.10 (Max-35)	
Methyl t-Butyl Ether	1634-04-4	MS	23.50	0.42	20	115	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	23	0.42	20	113	69 - 115	RPD 2.22 (Max-20)	
Methylene Chloride	75-09-2	MS	21.50	0	20	107	76 - 121		
Methylene Chloride	75-09-2	MSD	20.50	0	20	102	76 - 121	RPD 4.56 (Max-17)	
mp-Xylene	108383/106423	MS	46.50	0	40	116	79 - 125		
mp-Xylene	108383/106423	MSD	44.60	0	40	111	79 - 125	RPD 4.22 (Max-21)	
Naphthalene	91-20-3	MS	13.40	0	20	66.8	56 - 134		
Naphthalene	91-20-3	MSD	15.30	0	20	76.5	56 - 134	RPD 13.60 (Max-40)	
o-Chlorotoluene	95-49-8	MS	21.50	0	20	107	78 - 126		
o-Chlorotoluene	95-49-8	MSD	21.30	0	20	106	78 - 126	RPD 0.84 (Max-17)	
o-Xylene	95-47-6	MS	22.20	0	20	111	79 - 124		
o-Xylene	95-47-6	MSD	21.60	0	20	108	79 - 124	RPD 2.53 (Max-19)	
p-Chlorotoluene	106-43-4	MS	21.30	0	20	107	78 - 125		
p-Chlorotoluene	106-43-4	MSD	21.10	0	20	106	78 - 125	RPD 0.96 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	21.70	0	20	109	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	22.10	0	20	111	72 - 123	RPD 1.66 (Max-17)	
Styrene	100-42-5	MS	20.40	0	20	102	79 - 123		
Styrene	100-42-5	MSD	19.30	0	20	96.3	79 - 123	RPD 5.84 (Max-16)	
Tetrachloroethene	127-18-4	MS	21.70	0	20	109	72 - 124		
Tetrachloroethene	127-18-4	MSD	20.80	0	20	104	72 - 124	RPD 4.14 (Max-38)	
Toluene	108-88-3	MS	22.60	0	20	113	80 - 125		
Toluene	108-88-3	MSD	21.60	0	20	108	80 - 125	RPD 4.36 (Max-20)	
Total Xylenes	1330-20-7	MS	68.70	0	60	114	79 - 125		
Total Xylenes	1330-20-7	MSD	66.20	0	60	110	79 - 125	RPD 3.67 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	22.30	0	20	112	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	21.20	0	20	106	71 - 122	RPD 5.07 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	19.20	0	20	96.2	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	18.30	0	20	91.3	78 - 126	RPD 5.16 (Max-18)	
Trichloroethene	79-01-6	MS	23.20	0	20	116	77 - 124		
Trichloroethene	79-01-6	MSD	21.90	0	20	110	77 - 124	RPD 5.49 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	24.70	0	20	123	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	23.50	0	20	117	38 - 123	RPD 4.99 (Max-23)	
Vinyl Acetate	108-05-4	MS	13.80	0	20	69.2	58 - 136		
Vinyl Acetate	108-05-4	MSD	14	0	20	69.8	58 - 136	RPD 0.91 (Max-17)	
Vinyl Chloride	75-01-4	MS	23	0	20	115	27 - 138		
Vinyl Chloride	75-01-4	MSD	21.50	0	20	107	27 - 138	RPD 6.76 (Max-40)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	31.80	30	106	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	32	30	107	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	29.40	30	98	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.10	30	100	79 - 114	
Dibromofluoromethane	1868-53-7	MS	31.20	30	104	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	31.50	30	105	78 - 116	
Toluene-d8	2037-26-5	MS	30	30	100	76 - 127	
Toluene-d8	2037-26-5	MSD	29.60	30	98.7	76 - 127	

QC Batch

QC Batch	861751	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3250320005 3250320006 3250320019 3250320020
3250320021 3250320022 3250320023 3250320024
3250320025

Method Blank 3524933 (MB) Created on 07/05/2022 10:48 For QC Batch 861751

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.50	30	98.2	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	32.70	30	109	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	31.20	30	104	78 - 116	
Toluene-d8	2037-26-5	BLK	30.60	30	102	76 - 127	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Lab Control Standard 3524934 (LCS) Created on 07/05/2022 10:48 For QC Batch 861751

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	21.20		20	106	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	20.40		20	102	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	19.30		20	96.4	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	20.20		20	101	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	19.20		20	96.1	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	21.80		20	109	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	20.80		20	104	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	19.80		20	99.2	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	19.40		20	96.9	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	21.20		20	106	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	15.90		20	79.7	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	20.90		20	104	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	19.80		20	98.8	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	19.80		20	99	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	19.60		20	98.1	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	19.30		20	96.4	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	20.20		20	101	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	19.30		20	96.5	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	22.30		20	111	64 - 129		
2-Butanone	78-93-3	LCS	102		100	102	50 - 152		
2-Hexanone	591-78-6	LCS	83.10		100	83.1	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	97		100	97	71 - 146		
Acetone	67-64-1	LCS	101		100	101	40 - 151		
Benzene	71-43-2	LCS	20.50		20	103	80 - 124		
Bromobenzene	108-86-1	LCS	20.60		20	103	81 - 119		
Bromochloromethane	74-97-5	LCS	22.10		20	111	73 - 117		
Bromodichloromethane	75-27-4	LCS	20.60		20	103	79 - 126		
Bromoform	75-25-2	LCS	19.40		20	97	70 - 123		
Bromomethane	74-83-9	LCS	22		20	110	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	21.70		20	109	62 - 132		
Chlorobenzene	108-90-7	LCS	19.50		20	97.3	85 - 117		
Chlorodibromomethane	124-48-1	LCS	19.60		20	97.8	77 - 122		
Chloroethane	75-00-3	LCS	19.10		20	95.6	51 - 142		
Chloroform	67-66-3	LCS	20		20	100	78 - 122		
Chloromethane	74-87-3	LCS	19.40		20	97.1	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	19.80		20	98.8	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	20.60		20	103	81 - 121		
Dibromomethane	74-95-3	LCS	21.20		20	106	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	20.60		20	103	17 - 166		
Diisopropyl ether	108-20-3	LCS	19.60		20	97.8	74 - 131		
Ethylbenzene	100-41-4	LCS	20.10		20	100	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	21		20	105	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	21.50		20	107	69 - 115		
Methylene Chloride	75-09-2	LCS	19.20		20	96.1	76 - 121		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
mp-Xylene	108383/106423	LCS	41		40	103	79 - 125		
Naphthalene	91-20-3	LCS	19		20	94.8	56 - 134		
o-Chlorotoluene	95-49-8	LCS	19		20	95.1	78 - 126		
o-Xylene	95-47-6	LCS	20.70		20	103	79 - 124		
p-Chlorotoluene	106-43-4	LCS	19.40		20	97.2	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	20.20		20	101	72 - 123		
Styrene	100-42-5	LCS	20.50		20	103	79 - 123		
Tetrachloroethene	127-18-4	LCS	18.30		20	91.5	72 - 124		
Toluene	108-88-3	LCS	20.30		20	102	80 - 125		
Total Xylenes	1330-20-7	LCS	61.70		60	103	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	20.10		20	100	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	21.30		20	107	78 - 126		
Trichloroethene	79-01-6	LCS	18.90		20	94.4	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	22.50		20	113	38 - 123		
Vinyl Acetate	108-05-4	LCS	18.50		20	92.4	58 - 136		
Vinyl Chloride	75-01-4	LCS	21.30		20	107	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.80	30	96	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	32.20	30	107	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	31.40	30	105	78 - 116	
Toluene-d8	2037-26-5	LCS	29.80	30	99.4	76 - 127	

QC Batch

QC Batch	862258	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3250320010 3250320021 3250320022 3250320024 3250320026

Method Blank 3525816 (MB) Created on 07/06/2022 21:00 For QC Batch 862258

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	26.70	30	89.1	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	29.30	30	97.6	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	27	30	89.9	78 - 116	
Toluene-d8	2037-26-5	BLK	28.60	30	95.4	76 - 127	

Lab Control Standard 3525817 (LCS) Created on 07/06/2022 21:00 For QC Batch 862258

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	18.90		20	94.6	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	19.20		20	95.9	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	18.30		20	91.4	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	19.10		20	95.4	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	18.40		20	92.2	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	19.20		20	95.9	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	19.50		20	97.7	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	22.20		20	111	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	19.40		20	96.9	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.60		20	103	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	18		20	90.1	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	19.40		20	96.9	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	17.90		20	89.4	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	18.10		20	90.6	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	17.90		20	89.7	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	17.80		20	89.1	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	19.10		20	95.7	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	18.30		20	91.4	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	19.90		20	99.6	64 - 129		
2-Butanone	78-93-3	LCS	102		100	102	50 - 152		
2-Hexanone	591-78-6	LCS	94.20		100	94.2	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	107		100	107	71 - 146		
Acetone	67-64-1	LCS	84.40		100	84.4	40 - 151		
Benzene	71-43-2	LCS	19.30		20	96.5	80 - 124		
Bromobenzene	108-86-1	LCS	18.50		20	92.6	81 - 119		
Bromochloromethane	74-97-5	LCS	19.10		20	95.5	73 - 117		
Bromodichloromethane	75-27-4	LCS	18.80		20	93.9	79 - 126		
Bromoform	75-25-2	LCS	18.80		20	93.9	70 - 123		
Bromomethane	74-83-9	LCS	14.10		20	70.3	45 - 148		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Carbon Tetrachloride	56-23-5	LCS	19		20	94.9	62 - 132		
Chlorobenzene	108-90-7	LCS	18.50		20	92.6	85 - 117		
Chlorodibromomethane	124-48-1	LCS	19.30		20	96.4	77 - 122		
Chloroethane	75-00-3	LCS	17.30		20	86.3	51 - 142		
Chloroform	67-66-3	LCS	18.90		20	94.6	78 - 122		
Chloromethane	74-87-3	LCS	16.60		20	82.9	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	19.30		20	96.5	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	19.30		20	96.3	81 - 121		
Dibromomethane	74-95-3	LCS	19.30		20	96.3	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	18.20		20	90.8	17 - 166		
Diisopropyl ether	108-20-3	LCS	18.20		20	90.8	74 - 131		
Ethylbenzene	100-41-4	LCS	19.40		20	97.2	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	21		20	105	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	19.10		20	95.4	69 - 115		
Methylene Chloride	75-09-2	LCS	17.50		20	87.3	76 - 121		
mp-Xylene	108383/106423	LCS	39.50		40	98.8	79 - 125		
Naphthalene	91-20-3	LCS	21.80		20	109	56 - 134		
o-Chlorotoluene	95-49-8	LCS	18.30		20	91.5	78 - 126		
o-Xylene	95-47-6	LCS	19.20		20	95.8	79 - 124		
p-Chlorotoluene	106-43-4	LCS	19		20	95	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	19.10		20	95.5	72 - 123		
Styrene	100-42-5	LCS	19.30		20	96.3	79 - 123		
Tetrachloroethene	127-18-4	LCS	18.80		20	94	72 - 124		
Toluene	108-88-3	LCS	19.90		20	99.3	80 - 125		
Total Xylenes	1330-20-7	LCS	58.70		60	97.8	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	18.30		20	91.6	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	20.30		20	101	78 - 126		
Trichloroethene	79-01-6	LCS	17.50		20	87.6	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	18.70		20	93.5	38 - 123		
Vinyl Acetate	108-05-4	LCS	17.20		20	86	58 - 136		
Vinyl Chloride	75-01-4	LCS	17.60		20	88	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.80	30	96	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	27.70	30	92.5	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	27.90	30	93.2	78 - 116	
Toluene-d8	2037-26-5	LCS	28.40	30	94.7	76 - 127	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3250320001	MW-41D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320002	MW-01	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320003	MW-01D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320004	MW-22D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320005	MW-04	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861751
		N/A	N/A	N/A		SW846 8260D	861178
3250320006	MW-20	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861751
		N/A	N/A	N/A		SW846 8260D	861178
3250320007	MW-09	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320008	MW-23D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320009	MW-46D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320010	MW-16	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	862258
		N/A	N/A	N/A		SW846 8260D	861178
3250320011	MW-03	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320012	MW-27D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320013	MW-43	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320014	MW-39	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320015	MW-18	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320016	MW-40D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320017	MW-38R	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861178
3250320018	MW-05R	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	864099
		N/A	N/A	N/A		SW846 8260D	861178
3250320019	MW-44	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	864099
		N/A	N/A	N/A		SW846 8260D	861751
3250320020	MW-21D	SW846 3510C	860123	06/29/2022 15:05	AJW	SW846 8270E SIM	860443
		N/A	N/A	N/A		SW846 8260D	861751
3250320021	RW-1S	SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	860961
		N/A	N/A	N/A		SW846 8260D	861751
		N/A	N/A	N/A		SW846 8260D	862258
3250320022	RW-2S	SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	863754
		SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	860961
		N/A	N/A	N/A		SW846 8260D	862258
		N/A	N/A	N/A		SW846 8260D	861751
3250320023	RW-3S	SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	860961
		N/A	N/A	N/A		SW846 8260D	861751
3250320024	RW-1D	SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	863754
		SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	860961
		N/A	N/A	N/A		SW846 8260D	862258
		N/A	N/A	N/A		SW846 8260D	861751

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3250320025	RW-2D	SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	863754
		SW846 3510C	860299	06/30/2022 10:10	MXL	SW846 8270E SIM	860961
		N/A	N/A	N/A		SW846 8260D	861751
3250320026	Trip Blank	N/A	N/A	N/A		SW846 8260D	862258

7/13/2022 3:00 PM

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Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3250320

COC #: 2

ALS Quote #:

Logged By: KSB
PM: SJB

of

Client Name: WSP

Address: 13530 Dulles Technology Dr Suite 300 Herndon VA 20171

Contact: Eric Johnson

Phone#: (703) 709-6500

Project Name/#: Kop Flex offsite 3140545010

Bill To:

Purchase Order #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [ ] Y

Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	Container Type	Container Size	Preservative	EPA 8260 - VOCs	EPA 8270 - 1,4 Dioxane
						VOA	Amber		ANALYSES/METHOD REQUESTED	
							40mL	250mL		
						HCl	None			
						Enter Number of Containers Per Sample or Field Results Below.				
1 MW-41D	6/26/22	1455		G	GW	2	2			
2 MW-01	6/26/22	1505		G	GW	2	2			
3 MW-01D	6/26/22	1510		G	GW	2	2			
4 MW-02D	6/26/22	1525		G	GW	2	2			
5 MW-04	6/26/22	1540		G	GW	2	2			
6 MW-20	6/26/22	1550		G	GW	2	2			
7 MW-09	6/26/22	1605		G	GW	2	2			
8 MW-23D	6/26/22	1635		G	GW	2	2			
9 MW-46D	6/26/22	1630		G	GW	2	2			
10 MW-16	6/26/22	1700		G	GW	2	2			

SAMPLED BY (Please Print, if MD include Sampler #): Elliott Martynkiewicz

Comments:

Date:	Time		Relinquished By / Company Name		Received By / Company Name
6/27/22	1525	1	Elliott M	2	D Blum ALS
6/27/2022	1900	3	D Blum ALS	4	
		5		6	
		7		8	
		9		10	

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

(Received by Receiving Lab)

Temp Taken By: KSB Therm ID: 570 WO Temp (°C) 4

Receipt Info completed by:

WV Containers 0-6°C Y N NA

Cooler Custody Seals Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	Y	N	NA
Coolers & Samples Intact	Y	N	
Correct Containers Provided	Y	N	
Sample Label/COC Agree	Y	N	
Adequate Sample Volumes	Y	N	
VOA only: Headspace Present	Y	N	NA
VOA only: Trip Blank	Y	N	NA

NJ ≤ 4 days? Y N

Courier/Tracking #:

Deviations? NO YES

If YES, list below:

Client contact:

Date/Tech:

Sample(s) for Radiation testing? Y N

Reportable SDWA Sample(s)? Y N

SDWA State of Origin?

PWSID #

Rad Screen (uCi)

New Source? Y N

New Source Contact:

PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ]

EDD: [X] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] W [ ] FL MD oth

Rev 05

7/13/2022 3:00 PM

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Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 1 of 3 3250320 of

ALS Quote #:

Client Name: WSP

Address: 13530 Dulles Technology Dr
Herndon VA ~~20170~~ 20171

Contact: Eric Johnsen

Phone#: (703) 709-6500

Project Name/#: Kop-Flex Semi-Annual Sampling

Bill To: 3140154S.010

Purchase Order #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [ ] -Y

	Container Type	VOA	Amber								
	Container Size	40mL	250mL								
	Preservative	HCl	None								

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	EPA 8260 - VOCs	EPA 8270- 1,4 Dioxane								
							Enter Number of Containers Per Sample or Field Results Below.									
1	MW-03	6/26/22	1045		G	GW	2	2								
2	MW-27D	6/26/22	1105		G	GW	2	2								
3	MW-43	6/26/22	1115		G	GW	2	2								
4	MW-39	6/26/22	1130		G	GW	2	2								
5	~~MW-12~~ MW-18	6/26/22	1150		G	GW	2	2								
6	MW-40D	6/26/22	1200		G	GW	2	2								
7	MW-38R	6/26/22	1410		G	GW	2	2								
8	MW-05R	6/26/22	1420		G	GW	2	2								
9	MW-44	6/26/22	1435		G	GW	2	2								
10	MW-21D	6/26/22	1440		G	GW	2	2								

SAMPLED BY (Please Print, if MD include Sampler #): Elliott Martyniewicz

Comments:

Date:	Time		Relinquished By / Company Name		Received By / Company Name
6/27/22	1525	1	Elliott M	2	D Blunt ALS
6/27/2022	1900	3	D Blunt ALS	4	
		5		6	
		7		8	
		9		10	

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

Receipt Information (completed by Receiving Lab)

Temp Taken By: KSB Therm ID: 670 WO Temp (°C) 4

Receipt Info completed by: _____ WV Containers 0-6°C Y N NA

Cooler Custody Seals Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	Y	N	NA
Coolers & Samples Intact	Y	N	
Correct Containers Provided	Y	N	
Sample Label/COC Agree	Y	N	
Adequate Sample Volumes	Y	N	
VOA only: Headspace Present	Y	N	NA
VOA only: Trip Blank	Y	N	NA

NJ ≤ 4 days? Y N

Courier/Tracking #: _____

Deviations? NO YES

If YES, list below:

Client contact:

Date/Tech:

Sample(s) for Radiation testing? Y N Rad Screen (uCi)_____

Reportable SDWA Sample(s)? Y N New Source? Y N

SDWA State of Origin? _____ New Source Contact:

PWSID # _____

PWS Contact: _____ PWS Phone #: _____

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ] _____

EDD: [X] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [✓] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] MD other

100 of 101

7/13/2022 3:00 PM

101 of 101

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Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3 of 3 3250320 of

ALS Quote #:

Client Name: WSP

Address: 13530 Dulles Technology Dr
Suite 300
Herndon VA

Contact: Eric Johnson

Phone#: (703) 709-6500

Project Name/#: 3 Kop Flex Onsite 31401545.010

Bill To:

Purchase Order #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [ ] -Y

	Container Type	VOA	Amber								
	Container Size	40mL	250mL								
	Preservative	HCl	None								
	ANALYSES/METHOD REQUESTED										
	SDWA Sample Type (see key)										
	*G or C										
	**Matrix (See bottom of COC)										
	EPA 8260 - VOCs										
	EPA 8270 - 1,4 Dioxane										
Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	Enter Number of Containers								
1 RW-1S	6/26/22	1315		G	GW	2	2				
2 RW-2S	6/26/22	1320		G	GW	2	2				
3 RW-3S	6/26/22	1325		G	GW	2	2				
4 RW-1D	6/26/22	1335		G	GW	2	2				
5 RW-2D	6/26/22	1340		G	GW	2	2				
6 Trip Blank	6/26/22	—				6					
7											
8											
9											
10											

SAMPLED BY (Please Print, if MD include Sampler #): Elliott Martyniewicz

Comments:

Temp Taken By: KSB
WO Temp (°C) 4
Therm ID: 570
Receipt Info Completed By:
Cooler Custody Seal Intact Y N (NA)
Sample Custody Seal Intact Y N (NA)
Received on Ice (Y) N NA
Cooler & Samples Intact (Y) N
Correct Containers Provided (Y) N
Sample Label/COC Agree (Y) N
Adequate Sample Volumes (Y) N
VOA Headspace Present Y N (NA)
Voa Trip Blank Y N (NA)
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y (N)
PWSID
WV Containers 0-6°C Y N (NA)

Receipt Information (completed by Receiving Lab)
Temp Taken By: KSB Therm ID: 570 WO Temp (°C) 4
Receipt Info completed by:
WV Containers 0-6°C Y N NA
Cooler Custody Seals Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Coolers & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA only: Headspace Present Y N NA
VOA only: Trip Blank Y N NA
NJ ≤ 4 days? Y N
Courier/Tracking #:

Deviations? NO YES
If YES, list below:

Client contact:
Date/Tech:

Sample(s) for Radiation testing? Y N Rad Screen (uCi)
Reportable SDWA Sample(s)? Y N New Source? Y N
SDWA State of Origin? New Source Contact:
PWSID #
PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Date:	Time		Relinquished By / Company Name		Received By / Company Name
6/27/22	1525	1	Elliott	2	D. Black ALS
6/27/22	Rev	3	D. Black ALS	4	
		5		6	
		7		8	
		9		10	

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ] _____

EDD: [X] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] oth

NJ

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

Rev 05/

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **WSP USA Inc.**

Project Former KOP-Flex Facility Onsit
Workorder 3253660
Report ID 184558 on 7/29/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 16, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Elliott Martynkiewicz - WSP USA Inc.
Eric Johnson - WSP USA INC

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253660001	MW-42	Ground Water	07/15/2022 10:10	07/16/2022 08:52	CBC	Collected By Client
3253660002	MW-16D	Ground Water	07/15/2022 10:30	07/16/2022 08:52	CBC	Collected By Client
3253660003	DUP-071522	Ground Water	07/15/2022 11:00	07/16/2022 08:52	CBC	Collected By Client
3253660004	Trip Blank	Ground Water	07/15/2022 00:00	07/16/2022 08:52	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Bromochloromethane. The % Recovery was reported as 119 and the control limits were 73 to 117.
2	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte 1,4-Dichlorobenzene. The % Recovery was reported as 117 and the control limits were 81 to 116.
3	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 117 and the control limits were 69 to 115.
4	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Styrene. The % Recovery was reported as 125 and the control limits were 79 to 123.
5	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Benzene. The % Recovery was reported as 126 and the control limits were 80 to 124.
6	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte 1,1-Dichloropropene. The % Recovery was reported as 131 and the control limits were 76 to 126.

Detected Results Summary

Client Sample ID	**MW-42**	Collected	**07/15/2022 10:10**
Lab Sample ID	**3253660001**	Lab Receipt	**07/16/2022 08:52**

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	5.6	ug/L	0.096	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID	MW-16D	Collected	07/15/2022 10:30
Lab Sample ID	3253660002	Lab Receipt	07/16/2022 08:52

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	39.2	ug/L	0.96	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	8.3	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	27.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	136	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.7	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	DUP-071522	Collected	07/15/2022 11:00
Lab Sample ID	3253660003	Lab Receipt	07/16/2022 08:52

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	33.7	ug/L	0.96	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	7.9	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	26.8	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	112	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.5	ug/L	1.0	SW846 8260D	#
Methyl t-Butyl Ether	1.0	ug/L	1.0	SW846 8260D	#

Results

Client Sample ID **MW-42** Collected **07/15/2022 10:10**
Lab Sample ID **3253660001** Lab Receipt **07/16/2022 08:52**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	5.6		ug/L	0.096	SW846 8270E SIM	1	07/22/2022 18:13	GEC	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	48.8%	29 – 112	07/22/2022 18:13	
Fluoranthene-d10	93951-69-0	76.1%	45 – 130	07/22/2022 18:13	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
1,4-Dichlorobenzene	1.0 U	U,2	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Bromochloromethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A

Results

Client Sample ID	MW-42	Collected	07/15/2022 10:10
Lab Sample ID	3253660001	Lab Receipt	07/16/2022 08:52

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Methyl t-Butyl Ether	1.0 U	U,3	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Styrene	1.0 U	U,4	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:02	DPC	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:02	DPC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	110%	62 – 133	07/20/2022 14:02	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/20/2022 14:02	
Dibromofluoromethane	1868-53-7	98.2%	78 – 116	07/20/2022 14:02	
Toluene-d8	2037-26-5	106%	76 – 127	07/20/2022 14:02	

Results

Client Sample ID	**MW-16D**	Collected	**07/15/2022 10:30**
Lab Sample ID	**3253660002**	Lab Receipt	**07/16/2022 08:52**

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	39.2		ug/L	0.96	SW846 8270E SIM	10	07/28/2022 14:22	GEC	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	51%	29 – 112	07/28/2022 14:22	
2-Methylnapthalene-d10	7297-45-2	52.3%	29 – 112	07/22/2022 18:39	
Fluoranthene-d10	93951-69-0	70.1%	45 – 130	07/28/2022 14:22	
Fluoranthene-d10	93951-69-0	74.3%	45 – 130	07/22/2022 18:39	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,1,1-Trichloroethane	8.3		ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,1-Dichloroethane	27.4		ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,1-Dichloroethene	136		ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2-Dichloroethane	1.7		ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
1,4-Dichlorobenzene	1.0 U	U,2	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Bromochloromethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A

Results

Client Sample ID	MW-16D	Collected	07/15/2022 10:30
Lab Sample ID	3253660002	Lab Receipt	07/16/2022 08:52

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Methyl t-Butyl Ether	1.0 U	U,3	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Styrene	1.0 U	U,4	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 14:24	DPC	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 14:24	DPC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	109%	62 – 133	07/20/2022 14:24	
4-Bromofluorobenzene	460-00-4	106%	79 – 114	07/20/2022 14:24	
Dibromofluoromethane	1868-53-7	97.8%	78 – 116	07/20/2022 14:24	
Toluene-d8	2037-26-5	107%	76 – 127	07/20/2022 14:24	

Results

Client Sample ID	DUP-071522	Collected	07/15/2022 11:00
Lab Sample ID	3253660003	Lab Receipt	07/16/2022 08:52

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	33.7		ug/L	0.96	SW846 8270E SIM	10	07/28/2022 14:49	GEC	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	45.6%	29 – 112	07/25/2022 13:49	
2-Methylnapthalene-d10	7297-45-2	47.7%	29 – 112	07/28/2022 14:49	
Fluoranthene-d10	93951-69-0	64.7%	45 – 130	07/25/2022 13:49	
Fluoranthene-d10	93951-69-0	57.8%	45 – 130	07/28/2022 14:49	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,1,1-Trichloroethane	7.9		ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,1-Dichloroethane	26.8		ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,1-Dichloroethene	112		ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,1-Dichloropropene	1.0 U	U,6	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2-Dichloroethane	1.5		ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Benzene	1.0 U	U,5	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Bromochloromethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A

Results

Client Sample ID	DUP-071522	Collected	07/15/2022 11:00
Lab Sample ID	3253660003	Lab Receipt	07/16/2022 08:52

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Methyl t-Butyl Ether	1.0	3	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/22/2022 14:52	DPC	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/22/2022 14:52	DPC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	108%	62 – 133	07/22/2022 14:52	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/22/2022 14:52	
Dibromofluoromethane	1868-53-7	96.9%	78 – 116	07/22/2022 14:52	
Toluene-d8	2037-26-5	106%	76 – 127	07/22/2022 14:52	

Results

Client Sample ID	**Trip Blank**	Collected	**07/15/2022 00:00**
Lab Sample ID	**3253660004**	Lab Receipt	**07/16/2022 08:52**

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
1,4-Dichlorobenzene	1.0 U	U,2	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Bromochloromethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Methyl t-Butyl Ether	1.0 U	U,3	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A

Results

Client Sample ID	**Trip Blank**	Collected	**07/15/2022 00:00**
Lab Sample ID	**3253660004**	Lab Receipt	**07/16/2022 08:52**

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Styrene	1.0 U	U,4	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	07/20/2022 12:55	DPC	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	07/20/2022 12:55	DPC	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	108%	62 – 133	07/20/2022 12:55	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/20/2022 12:55	
Dibromofluoromethane	1868-53-7	97.3%	78 – 116	07/20/2022 12:55	
Toluene-d8	2037-26-5	107%	76 – 127	07/20/2022 12:55	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253660001	MW-42	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3253660002	MW-16D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3253660003	DUP-071522	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3253660004	Trip Blank	SW846 8260D	N/A	

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM

QC Batch

QC Batch	865969	Prep Method	SW846 3510C
Date	07/21/2022 10:05	Analysis Method	SW846 8270E SIM
Tech.	MXL		

Associated Samples

3253660001 3253660003 3253660002

Matrix Spike 3532240 (MS) 3253323001 (non-Project Sample) For QC Batch 865969

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3532241 (MSD) 3253323001 (non-Project Sample) For QC Batch 865969

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	MS	1.20	0	1	119*	22 - 75		
1,4-Dioxane	123-91-1	MSD	0.47	0	1	47.4	22 - 75	RPD 86.10* (Max-30)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	MS	0.50	1	49.7	29 - 112	
2-Methylnapthalene-d10	7297-45-2	MSD	0.51	1	51	29 - 112	
Fluoranthene-d10	93951-69-0	MS	0.87	1	86.7	45 - 130	
Fluoranthene-d10	93951-69-0	MSD	0.80	1	80	45 - 130	

Method Blank 3532238 (MB) Created on 07/21/2022 06:41 For QC Batch 865969

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	0.10 U	ug/L	0.10	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.45	1	45	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	0.80	1	80.1	45 - 130	

Lab Control Standard 3532239 (LCS) Created on 07/21/2022 06:41 For QC Batch 865969

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.48		1	48.3	22 - 75		

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.47	1	47.2	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.86	1	86.1	45 - 130	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS

QC Batch

QC Batch	864700	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3253660002 3253660001 3253660004

Method Blank 3530529 (MB) Created on 07/18/2022 08:06 For QC Batch 864700

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	32.30	30	108	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	32.30	30	108	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.90	30	96.5	78 - 116	
Toluene-d8	2037-26-5	BLK	32.40	30	108	76 - 127	

Lab Control Standard 3530530 (LCS) Created on 07/18/2022 08:06 For QC Batch 864700

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	23.70		20	118	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	24.10		20	121	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	23.10		20	115	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	23		20	115	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	23.30		20	117	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	25.50		20	127	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	25.10		20	125	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	22.50		20	112	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	23.10		20	115	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.40		20	102	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	23.50		20	117	59 - 133		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dibromoethane	106-93-4	LCS	21		20	105	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	22.80		20	114	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	23		20	115	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	23.40		20	117	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	23		20	115	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	22.20		20	111	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	23.40		20	117*	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	24.80		20	124	64 - 129		
2-Butanone	78-93-3	LCS	78.40		100	78.4	50 - 152		
2-Hexanone	591-78-6	LCS	107		100	107	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	114		100	114	71 - 146		
Acetone	67-64-1	LCS	151		100	151	40 - 151		
Benzene	71-43-2	LCS	24.40		20	122	80 - 124		
Bromobenzene	108-86-1	LCS	23.80		20	119	81 - 119		
Bromochloromethane	74-97-5	LCS	23.70		20	119*	73 - 117		
Bromodichloromethane	75-27-4	LCS	24.20		20	121	79 - 126		
Bromoform	75-25-2	LCS	22.10		20	110	70 - 123		
Bromomethane	74-83-9	LCS	20.10		20	100	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	24.50		20	122	62 - 132		
Chlorobenzene	108-90-7	LCS	22.40		20	112	85 - 117		
Chlorodibromomethane	124-48-1	LCS	23.50		20	117	77 - 122		
Chloroethane	75-00-3	LCS	21		20	105	51 - 142		
Chloroform	67-66-3	LCS	23.80		20	119	78 - 122		
Chloromethane	74-87-3	LCS	19.90		20	99.6	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	23.90		20	119	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	23.40		20	117	81 - 121		
Dibromomethane	74-95-3	LCS	23.70		20	119	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	21.20		20	106	17 - 166		
Diisopropyl ether	108-20-3	LCS	23.40		20	117	74 - 131		
Ethylbenzene	100-41-4	LCS	24		20	120	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	25.60		20	128	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	23.40		20	117*	69 - 115		
Methylene Chloride	75-09-2	LCS	22.20		20	111	76 - 121		
mp-Xylene	108383/106423	LCS	49.10		40	123	79 - 125		
Naphthalene	91-20-3	LCS	21.50		20	107	56 - 134		
o-Chlorotoluene	95-49-8	LCS	24.40		20	122	78 - 126		
o-Xylene	95-47-6	LCS	23.30		20	116	79 - 124		
p-Chlorotoluene	106-43-4	LCS	24.50		20	122	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	24.30		20	122	72 - 123		
Styrene	100-42-5	LCS	25.10		20	125*	79 - 123		
Tetrachloroethene	127-18-4	LCS	22.40		20	112	72 - 124		
Toluene	108-88-3	LCS	23.90		20	120	80 - 125		
Total Xylenes	1330-20-7	LCS	72.40		60	121	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	24		20	120	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	23.40		20	117	78 - 126		
Trichloroethene	79-01-6	LCS	22.10		20	111	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	22.10		20	111	38 - 123		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Vinyl Acetate	108-05-4	LCS	17.70		20	88.3	58 - 136		
Vinyl Chloride	75-01-4	LCS	20.50		20	102	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	32.30	30	108	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	31.20	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	29.50	30	98.4	78 - 116	
Toluene-d8	2037-26-5	LCS	31.10	30	104	76 - 127	

Matrix Spike 3531803 (MS) 3253660001 For QC Batch 864700

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3531804 (MSD) 3253660001 For QC Batch 864700

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	21	0	20	105	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	20.60	0	20	103	78 - 121	RPD 1.67 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	22.20	0	20	111	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	22.40	0	20	112	66 - 130	RPD 0.81 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	21	0	20	105	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.40	0	20	107	74 - 135	RPD 1.88 (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	20.50	0	20	103	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	20.80	0	20	104	82 - 126	RPD 1.32 (Max-15)	
1,1-Dichloroethane	75-34-3	MS	21.20	0	20	106	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	20.80	0	20	104	78 - 124	RPD 1.90 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	23.30	0	20	116	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	23.50	0	20	117	63 - 128	RPD 0.84 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	23.40	0	20	117	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	23.70	0	20	119	76 - 126	RPD 1.65 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	14.50	0	20	72.7	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	16.30	0	20	81.6	61 - 126	RPD 11.60 (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	20.50	0	20	103	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	21.70	0	20	109	75 - 132	RPD 5.66 (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	14.80	0	20	74.2	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	15.90	0	20	79.6	67 - 123	RPD 7.05 (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	17.60	0	20	88.1	59 - 133		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	19.50	0	20	97.5	59 - 133	RPD 10.10 (Max-26)	
1,2-Dibromoethane	106-93-4	MS	18.90	0	20	94.7	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	19	0	20	95.1	80 - 124	RPD 0.42 (Max-19)	
1,2-Dichlorobenzene	95-50-1	MS	20.20	0	20	101	82 - 118		
1,2-Dichlorobenzene	95-50-1	MSD	20.20	0	20	101	82 - 118	RPD 0.37 (Max-15)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dichloroethane	107-06-2	MS	21.50	0	20	108	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	20.50	0	20	102	70 - 133	RPD 4.89 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	21.80	0	20	109	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	21.20	0	20	106	81 - 127	RPD 2.66 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	20.40	0	20	102	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	20	0	20	100	81 - 118	RPD 2.13 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	20.70	0	20	103	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	20.60	0	20	103	82 - 126	RPD 0.40 (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	20.60	0	20	103	81 - 116		
1,4-Dichlorobenzene	106-46-7	MSD	20.60	0	20	103	81 - 116	RPD 0.05 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	19.70	0	20	98.5	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	19.20	0	20	96.1	64 - 129	RPD 2.47 (Max-18)	
2-Butanone	78-93-3	MS	70.70	0	100	70.7	50 - 152		
2-Butanone	78-93-3	MSD	66	0	100	66	50 - 152	RPD 6.99 (Max-16)	
2-Hexanone	591-78-6	MS	82.40	0	100	82.4	65 - 154		
2-Hexanone	591-78-6	MSD	94.30	0	100	94.3	65 - 154	RPD 13.50 (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	98.40	0	100	98.4	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	106	0	100	106	71 - 146	RPD 7.30 (Max-16)	
Acetone	67-64-1	MS	94	0	100	94	40 - 151		
Acetone	67-64-1	MSD	106	0	100	106	40 - 151	RPD 12.20 (Max-40)	
Benzene	71-43-2	MS	22.60	0	20	113	80 - 124		
Benzene	71-43-2	MSD	22.20	0	20	111	80 - 124	RPD 2.03 (Max-26)	
Bromobenzene	108-86-1	MS	21.70	0	20	108	81 - 119		
Bromobenzene	108-86-1	MSD	21.50	0	20	107	81 - 119	RPD 0.86 (Max-17)	
Bromochloromethane	74-97-5	MS	21.50	0	20	108	73 - 117		
Bromochloromethane	74-97-5	MSD	21.10	0	20	105	73 - 117	RPD 2.07 (Max-19)	
Bromodichloromethane	75-27-4	MS	22.20	0	20	111	79 - 126		
Bromodichloromethane	75-27-4	MSD	21.20	0	20	106	79 - 126	RPD 4.49 (Max-16)	
Bromoform	75-25-2	MS	19.20	0	20	96.2	70 - 123		
Bromoform	75-25-2	MSD	18.80	0	20	94	70 - 123	RPD 2.26 (Max-16)	
Bromomethane	74-83-9	MS	16.70	0	20	83.5	45 - 148		
Bromomethane	74-83-9	MSD	15.60	0	20	77.8	45 - 148	RPD 7.07 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	22.50	0	20	113	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	22.50	0	20	113	62 - 132	RPD 0.16 (Max-17)	
Chlorobenzene	108-90-7	MS	20.10	0	20	101	85 - 117		
Chlorobenzene	108-90-7	MSD	20.40	0	20	102	85 - 117	RPD 1.53 (Max-15)	
Chlorodibromomethane	124-48-1	MS	20.50	0	20	103	77 - 122		
Chlorodibromomethane	124-48-1	MSD	20.40	0	20	102	77 - 122	RPD 0.49 (Max-15)	
Chloroethane	75-00-3	MS	19.20	0	20	95.8	51 - 142		
Chloroethane	75-00-3	MSD	18.60	0	20	93.2	51 - 142	RPD 2.73 (Max-24)	
Chloroform	67-66-3	MS	21.80	0	20	109	78 - 122		
Chloroform	67-66-3	MSD	21.40	0	20	107	78 - 122	RPD 1.61 (Max-16)	
Chloromethane	74-87-3	MS	17.90	0	20	89.4	38 - 156		
Chloromethane	74-87-3	MSD	18.20	0	20	90.9	38 - 156	RPD 1.70 (Max-27)	
cis-1,2-Dichloroethene	156-59-2	MS	22	0	20	110	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	21.60	0	20	108	78 - 125	RPD 2.02 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	20.30	0	20	101	81 - 121		
cis-1,3-Dichloropropene	10061-01-5	MSD	19.80	0	20	99	81 - 121	RPD 2.30 (Max-16)	
Dibromomethane	74-95-3	MS	22.10	0	20	111	81 - 125		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Dibromomethane	74-95-3	MSD	21.50	0	20	108	81 - 125	RPD 2.74 (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	18.50	0	20	92.4	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	18.90	0	20	94.4	17 - 166	RPD 2.11 (Max-24)	
Diisopropyl ether	108-20-3	MS	21.20	0	20	106	74 - 131		
Diisopropyl ether	108-20-3	MSD	20.70	0	20	104	74 - 131	RPD 2.30 (Max-15)	
Ethylbenzene	100-41-4	MS	21.40	0	20	107	80 - 124		
Ethylbenzene	100-41-4	MSD	21.70	0	20	109	80 - 124	RPD 1.43 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	17.60	0	20	88	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	17.80	0	20	88.9	55 - 128	RPD 0.96 (Max-35)	
Methyl t-Butyl Ether	1634-04-4	MS	21.30	0	20	107	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	20.70	0	20	103	69 - 115	RPD 3.20 (Max-20)	
Methylene Chloride	75-09-2	MS	20.90	0	20	105	76 - 121		
Methylene Chloride	75-09-2	MSD	20.30	0	20	102	76 - 121	RPD 2.80 (Max-17)	
mp-Xylene	108383/106423	MS	43.70	0	40	109	79 - 125		
mp-Xylene	108383/106423	MSD	44.10	0	40	110	79 - 125	RPD 0.84 (Max-21)	
Naphthalene	91-20-3	MS	13.80	0	20	68.8	56 - 134		
Naphthalene	91-20-3	MSD	16.10	0	20	80.3	56 - 134	RPD 15.40 (Max-40)	
o-Chlorotoluene	95-49-8	MS	22.10	0	20	110	78 - 126		
o-Chlorotoluene	95-49-8	MSD	22	0	20	110	78 - 126	RPD 0.27 (Max-17)	
o-Xylene	95-47-6	MS	20.70	0	20	103	79 - 124		
o-Xylene	95-47-6	MSD	20.90	0	20	104	79 - 124	RPD 0.89 (Max-19)	
p-Chlorotoluene	106-43-4	MS	22	0	20	110	78 - 125		
p-Chlorotoluene	106-43-4	MSD	22.20	0	20	111	78 - 125	RPD 0.95 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	20.50	0	20	103	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	21.70	0	20	108	72 - 123	RPD 5.37 (Max-17)	
Styrene	100-42-5	MS	22.70	0	20	113	79 - 123		
Styrene	100-42-5	MSD	21.90	0	20	110	79 - 123	RPD 3.39 (Max-16)	
Tetrachloroethene	127-18-4	MS	19.50	0	20	97.3	72 - 124		
Tetrachloroethene	127-18-4	MSD	19.80	0	20	99.2	72 - 124	RPD 1.95 (Max-38)	
Toluene	108-88-3	MS	21.70	0	20	108	80 - 125		
Toluene	108-88-3	MSD	21.70	0	20	108	80 - 125	RPD 0.07 (Max-20)	
Total Xylenes	1330-20-7	MS	64.40	0	60	107	79 - 125		
Total Xylenes	1330-20-7	MSD	64.90	0	60	108	79 - 125	RPD 0.85 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	22.10	0	20	111	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	22	0	20	110	71 - 122	RPD 0.73 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	20.10	0	20	100	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	20	0	20	100	78 - 126	RPD 0.02 (Max-18)	
Trichloroethene	79-01-6	MS	20.10	0	20	100	77 - 124		
Trichloroethene	79-01-6	MSD	20.70	0	20	103	77 - 124	RPD 2.90 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	20.10	0	20	100	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	20.50	0	20	102	38 - 123	RPD 1.82 (Max-23)	
Vinyl Acetate	108-05-4	MS	11.80	0	20	58.8	58 - 136		
Vinyl Acetate	108-05-4	MSD	11.80	0	20	59.2	58 - 136	RPD 0.64 (Max-17)	
Vinyl Chloride	75-01-4	MS	19.10	0	20	95.3	27 - 138		
Vinyl Chloride	75-01-4	MSD	18.90	0	20	94.3	27 - 138	RPD 1.07 (Max-40)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	33.20	30	111	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	32.40	30	108	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	31.20	30	104	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	31	30	103	79 - 114	
Dibromofluoromethane	1868-53-7	MS	29.60	30	98.6	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	29.20	30	97.4	78 - 116	
Toluene-d8	2037-26-5	MS	30.70	30	102	76 - 127	
Toluene-d8	2037-26-5	MSD	31.30	30	104	76 - 127	

QC Batch

QC Batch	866377	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3253660003

Method Blank 3532927 (MB) Created on 07/22/2022 07:44 For QC Batch 866377

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	31.20	30	104	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	31.80	30	106	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.90	30	96.2	78 - 116	
Toluene-d8	2037-26-5	BLK	31.60	30	105	76 - 127	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Lab Control Standard 3532928 (LCS) Created on 07/22/2022 07:45 For QC Batch 866377

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	23		20	115	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	24.50		20	122	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	22.50		20	113	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	22.20		20	111	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	24.10		20	121	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	25.60		20	128	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	26.20		20	131*	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	19.80		20	98.8	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	22.20		20	111	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	19.50		20	97.6	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	20.30		20	101	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	20.70		20	103	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	22.90		20	114	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	23.50		20	118	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	24.40		20	122	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	23		20	115	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	22.60		20	113	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	23.20		20	116	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	25		20	125	64 - 129		
2-Butanone	78-93-3	LCS	69.30		100	69.3	50 - 152		
2-Hexanone	591-78-6	LCS	93.30		100	93.3	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	109		100	109	71 - 146		
Acetone	67-64-1	LCS	123		100	123	40 - 151		
Benzene	71-43-2	LCS	25.30		20	126*	80 - 124		
Bromobenzene	108-86-1	LCS	23.40		20	117	81 - 119		
Bromochloromethane	74-97-5	LCS	23.90		20	119*	73 - 117		
Bromodichloromethane	75-27-4	LCS	24.20		20	121	79 - 126		
Bromoform	75-25-2	LCS	20		20	100	70 - 123		
Bromomethane	74-83-9	LCS	18.40		20	92.2	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	24.90		20	124	62 - 132		
Chlorobenzene	108-90-7	LCS	22.30		20	111	85 - 117		
Chlorodibromomethane	124-48-1	LCS	22.30		20	111	77 - 122		
Chloroethane	75-00-3	LCS	21		20	105	51 - 142		
Chloroform	67-66-3	LCS	24.50		20	122	78 - 122		
Chloromethane	74-87-3	LCS	20.40		20	102	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	24.80		20	124	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	23.50		20	117	81 - 121		
Dibromomethane	74-95-3	LCS	23.90		20	120	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	20.80		20	104	17 - 166		
Diisopropyl ether	108-20-3	LCS	24.60		20	123	74 - 131		
Ethylbenzene	100-41-4	LCS	23.60		20	118	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	23.50		20	118	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	23.50		20	117*	69 - 115		
Methylene Chloride	75-09-2	LCS	22.90		20	114	76 - 121		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
mp-Xylene	108383/106423	LCS	48.10		40	120	79 - 125		
Naphthalene	91-20-3	LCS	18.70		20	93.7	56 - 134		
o-Chlorotoluene	95-49-8	LCS	24.50		20	122	78 - 126		
o-Xylene	95-47-6	LCS	22.90		20	114	79 - 124		
p-Chlorotoluene	106-43-4	LCS	24.50		20	123	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	23.90		20	120	72 - 123		
Styrene	100-42-5	LCS	24.50		20	123	79 - 123		
Tetrachloroethene	127-18-4	LCS	22.20		20	111	72 - 124		
Toluene	108-88-3	LCS	23.80		20	119	80 - 125		
Total Xylenes	1330-20-7	LCS	71		60	118	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	24.40		20	122	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	23.10		20	115	78 - 126		
Trichloroethene	79-01-6	LCS	22.70		20	113	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	22.20		20	111	38 - 123		
Vinyl Acetate	108-05-4	LCS	15.80		20	79.2	58 - 136		
Vinyl Chloride	75-01-4	LCS	20.60		20	103	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	32.50	30	108	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	30.90	30	103	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	29.20	30	97.4	78 - 116	
Toluene-d8	2037-26-5	LCS	30.40	30	101	76 - 127	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253660001	MW-42	SW846 3510C	865969	07/21/2022 10:05	MXL	SW846 8270E SIM	866455
		N/A	N/A	N/A		SW846 8260D	864700
3253660002	MW-16D	SW846 3510C	865969	07/21/2022 10:05	MXL	SW846 8270E SIM	867362
		SW846 3510C	865969	07/21/2022 10:05	MXL	SW846 8270E SIM	866455
		N/A	N/A	N/A		SW846 8260D	864700
3253660003	DUP-071522	SW846 3510C	865969	07/21/2022 10:05	MXL	SW846 8270E SIM	866921
		SW846 3510C	865969	07/21/2022 10:05	MXL	SW846 8270E SIM	867362
		N/A	N/A	N/A		SW846 8260D	866377
3253660004	Trip Blank	N/A	N/A	N/A		SW846 8260D	864700

CHAIN-OF-CUSTODY RECORD

3253660
Logged By: AXF
PM: SJB

WSP USA Office Address: 13530 Dulles Technology Dr Suite 300 Herndon VA 20171

Project Name: Kop-Flex Onsite
WSP USA Contact Name: Eric Johnson
Project Location: Hanover MD
WSP USA Contact E-mail: eric.johnson@wsp.com
Project Number & Task: 31401545.010 Task 04.63
WSP USA Contact Phone: (703)-706-6500
Sampler(s) Name(s): Elliott Martynkiewicz
Sampler(s) Signature(s):

Labo.: ALS Global Middletown PA
Laboratory Project Manager: Sue Scherer

Requested Turn-Around-Time: [X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ____ HR

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	VOCs 8260	1,4-Dioxane	Sample Comments
MW-42	GW			7/15/22	1010	4	X2	X2	
MW-16D	GW			7/15/22	1030	4	X2	X2	
DUP-071522	GW			7/15/22	1100	4	X2	X2	
Trip Blank	-					2	X2	AMRF 7/29/22	

Temp Taken By: NL
WO Temp (°C): 4.
Therm ID: 573
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact: Y N (NA)
Sample Custody Seal Intact: Y N (NA)
Received on Ice: (Y) N NA
Cooler & Samples Intact: (Y) N
Correct Containers Provided: (Y) N
Sample Label/COC Agree: (Y) N
Adequate Sample Volumes: (Y) N
VOA Headspace Present: Y (N) NA
Voa Trip Blank: (Y) N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #: 8127 8129 5420
SDWA Compliance: Y (N)
PWSID
WV Containers 0-6°C: Y N (NA)
NO PRES (AlUNP, G/HCl)

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	7/15/22	1500	Fedex				
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
Fedex				7/16/22	852		

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

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

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **WSP USA Inc.**

Project 31405608.010
Workorder 3275168
Report ID 221698 on 1/30/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 21, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Elliott Martynkiewicz - WSP USA Inc.
Eric Johnson - WSP USA INC

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3275168001	MW-03	Ground Water	11/20/2022 10:00	11/21/2022 17:40	CBC	Collected By Client
3275168002	MW-27D	Ground Water	11/20/2022 10:15	11/21/2022 17:40	CBC	Collected By Client
3275168003	MW-43	Ground Water	11/20/2022 10:30	11/21/2022 17:40	CBC	Collected By Client
3275168004	MW-39	Ground Water	11/20/2022 11:40	11/21/2022 17:40	CBC	Collected By Client
3275168005	MW-42	Ground Water	11/20/2022 11:55	11/21/2022 17:40	CBC	Collected By Client
3275168006	MW-18	Ground Water	11/20/2022 12:15	11/21/2022 17:40	CBC	Collected By Client
3275168007	MW-38R	Ground Water	11/20/2022 12:20	11/21/2022 17:40	CBC	Collected By Client
3275168008	MW-40D	Ground Water	11/20/2022 12:55	11/21/2022 17:40	CBC	Collected By Client
3275168009	MW-05R	Ground Water	11/20/2022 12:40	11/21/2022 17:40	CBC	Collected By Client
3275168010	MW-44	Ground Water	11/20/2022 14:10	11/21/2022 17:40	CBC	Collected By Client
3275168011	MW-21D	Ground Water	11/20/2022 14:30	11/21/2022 17:40	CBC	Collected By Client
3275168012	MW-41D	Ground Water	11/20/2022 14:45	11/21/2022 17:40	CBC	Collected By Client
3275168013	MW-09	Ground Water	11/20/2022 15:20	11/21/2022 17:40	CBC	Collected By Client
3275168014	MW-23D	Ground Water	11/20/2022 15:30	11/21/2022 17:40	CBC	Collected By Client
3275168015	MW-46D	Ground Water	11/20/2022 16:00	11/21/2022 17:40	CBC	Collected By Client
3275168016	MW-01	Ground Water	11/20/2022 16:10	11/21/2022 17:40	CBC	Collected By Client
3275168017	MW-01D	Ground Water	11/20/2022 16:20	11/21/2022 17:40	CBC	Collected By Client
3275168018	MW-22D	Ground Water	11/20/2022 16:30	11/21/2022 17:40	CBC	Collected By Client
3275168019	MW-20	Ground Water	11/20/2022 16:45	11/21/2022 17:40	CBC	Collected By Client
3275168020	MW-4R	Ground Water	11/20/2022 16:55	11/21/2022 17:40	CBC	Collected By Client
3275168021	MW-16	Ground Water	11/20/2022 17:05	11/21/2022 17:40	CBC	Collected By Client
3275168022	Trip Blank-A	Ground Water	11/20/2022 17:05	11/21/2022 17:40	CBC	Collected By Client
3275168023	Trip Blank-B	Ground Water	11/20/2022 17:05	11/21/2022 17:40	CBC	Collected By Client
3275168024	Trip Blank-E	Ground Water	11/20/2022 17:05	11/21/2022 17:40	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

P1 This workorder was modified to correct the reporting limits of 1,4-Dioxane from the 8270E SIM analysis based on Task Orders submitted to ALS. A reporting limit (RL) for 1,4-dioxane of 1 µg/L was requested. AJL 1/30/2023.

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 169 and the control limits were 45 to 148.
2	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 153 and the control limits were 55 to 128.
3	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Acetone. The RPD was reported as 56.4 and the upper control limit is 40.
4	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Bromoform. The RPD was reported as 21.2 and the upper control limit is 16.
5	The QC sample type MS for method SW846 8260D was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 233 and the control limits were 45 to 148.
6	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 197 and the control limits were 45 to 148.
7	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 2-Butanone. The RPD was reported as 52.2 and the upper control limit is 16.
8	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Carbon Tetrachloride. The % Recovery was reported as 140 and the control limits were 62 to 132.
9	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Carbon Tetrachloride. The RPD was reported as 22.2 and the upper control limit is 17.
10	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Chlorodibromomethane. The RPD was reported as 17.1 and the upper control limit is 15.
11	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,2-Dibromo-3-chloropropane. The RPD was reported as 42.4 and the upper control limit is 26.
12	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,2-Dibromoethane. The RPD was reported as 19.7 and the upper control limit is 19.
13	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Dibromomethane. The RPD was reported as 17.1 and the upper control limit is 16.
14	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,2-Dichlorobenzene. The RPD was reported as 17.1 and the upper control limit is 15.
15	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,3-Dichloropropane. The RPD was reported as 16.7 and the upper control limit is 15.
16	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte trans-1,3-Dichloropropene. The RPD was reported as 19.2 and the upper control limit is 18.
17	The QC sample type MS for method SW846 8260D was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 142 and the control limits were 55 to 128.
18	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 153 and the control limits were 55 to 128.
19	The QC sample type MS for method SW846 8260D was outside the control limits for the analyte 2-Hexanone. The % Recovery was reported as 63.2 and the control limits were 65 to 154.
20	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 2-Hexanone. The RPD was reported as 46.3 and the upper control limit is 17.

21	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte p-Isopropyltoluene. The % Recovery was reported as 125 and the control limits were 72 to 123.
22	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Methyl t-Butyl Ether. The RPD was reported as 23.2 and the upper control limit is 20.
23	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 4-Methyl-2-Pentanone(MIBK). The RPD was reported as 39.3 and the upper control limit is 16.
24	The QC sample type MS for method SW846 8260D was outside the control limits for the analyte Naphthalene. The % Recovery was reported as 41.9 and the control limits were 56 to 134.
25	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Naphthalene. The RPD was reported as 70.5 and the upper control limit is 40.
26	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,1,2,2-Tetrachloroethane. The RPD was reported as 26.8 and the upper control limit is 16.
27	The QC sample type MS for method SW846 8260D was outside the control limits for the analyte 1,2,3-Trichlorobenzene. The % Recovery was reported as 48.2 and the control limits were 61 to 126.
28	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,2,3-Trichlorobenzene. The RPD was reported as 66.2 and the upper control limit is 36.
29	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,2,4-Trichlorobenzene. The RPD was reported as 36.9 and the upper control limit is 22.
30	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,1,2-Trichloroethane. The RPD was reported as 17.6 and the upper control limit is 15.
31	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte 1,2,3-Trichloropropane. The RPD was reported as 28.2 and the upper control limit is 19.
32	The QC sample type MSD for method SW846 8260D was outside the control limits for the analyte Vinyl Acetate. The RPD was reported as 21.9 and the upper control limit is 17.
33	The QC sample type MS for method SW846 8270E SIM was outside the control limits for the analyte 1,4-Dioxane. The % Recovery was reported as 97.6 and the control limits were 22 to 75.
34	The QC sample type MS for method SW846 8270E SIM was outside the control limits for the analyte 1,4-Dioxane. The % Recovery was reported as 14.2 and the control limits were 22 to 75.

Detected Results Summary

Client Sample ID	MW-43	Collected	11/20/2022 10:30
Lab Sample ID	3275168003	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	9.6	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	20.3	ug/L	1.0	SW846 8260D	#
Methyl t-Butyl Ether	2.2	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-42	Collected	11/20/2022 11:55
Lab Sample ID	3275168005	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	5.4	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
Toluene	1.9	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-38R	Collected	11/20/2022 12:20
Lab Sample ID	3275168007	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	20.1	ug/L	2.5	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethane	7.1	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-05R	Collected	11/20/2022 12:40
Lab Sample ID	3275168009	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	1.1	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1.0	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-44	Collected	11/20/2022 14:10
Lab Sample ID	3275168010	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	4.2	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	8.0	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	2.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	3.9	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-21D	Collected	11/20/2022 14:30
Lab Sample ID	3275168011	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	5.5	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethene	17.6	ug/L	1.0	SW846 8260D	#
Methyl t-Butyl Ether	1.2	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-41D	Collected	11/20/2022 14:45
Lab Sample ID	3275168012	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	1.1	ug/L	1.0	SW846 8270E SIM	#

Detected Results Summary

Client Sample ID	MW-09	Collected	11/20/2022 15:20
Lab Sample ID	3275168013	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	7.5	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.9	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	35.7	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-23D	Collected	11/20/2022 15:30
Lab Sample ID	3275168014	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	59.6	ug/L	5.4	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	9.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	33.6	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	140	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.7	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-46D	Collected	11/20/2022 16:00
Lab Sample ID	3275168015	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	40.1	ug/L	6.3	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	3.6	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	15.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	74.9	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-01D	Collected	11/20/2022 16:20
Lab Sample ID	3275168017	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	6.8	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1.0	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	3.0	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	16.8	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-22D	Collected	11/20/2022 16:30
Lab Sample ID	3275168018	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	2.7	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1-Dichloroethene	6.1	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-20	Collected	11/20/2022 16:45
Lab Sample ID	3275168019	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	560	ug/L	132	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,2-Trichloroethane	2.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	258	ug/L	10.0	SW846 8260D	#
1,1-Dichloroethene	348	ug/L	10.0	SW846 8260D	#
1,2-Dichloroethane	9.7	ug/L	1.0	SW846 8260D	#
cis-1,2-Dichloroethene	2.6	ug/L	1.0	SW846 8260D	#
Trichloroethene	2.7	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-4R	Collected	11/20/2022 16:55
Lab Sample ID	3275168020	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	57.3	ug/L	5.3	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	1.1	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	37.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	76.0	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.1	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	MW-16	Collected	11/20/2022 17:05
Lab Sample ID	3275168021	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	143	ug/L	28.6	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	2960	ug/L	100	SW846 8260D	#
1,1-Dichloroethane	3290	ug/L	100	SW846 8260D	#
1,1-Dichloroethene	4290	ug/L	100	SW846 8260D	#
Acetone	50.1	ug/L	10.0	SW846 8260D	#
Chloroethane	136	ug/L	1.0	SW846 8260D	#
Ethylbenzene	2.2	ug/L	1.0	SW846 8260D	#
mp-Xylene	6.5	ug/L	2.0	SW846 8260D	#
o-Xylene	3.2	ug/L	1.0	SW846 8260D	#
Tetrachloroethene	9.4	ug/L	1.0	SW846 8260D	#
Toluene	1.4	ug/L	1.0	SW846 8260D	#
Total Xylenes	9.7	ug/L	3.0	SW846 8260D	#
Trichloroethene	28.0	ug/L	1.0	SW846 8260D	#
Vinyl Chloride	13.2	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	Trip Blank-B	Collected	11/20/2022 17:05
Lab Sample ID	3275168023	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
VOLATILE ORGANICS					
Chloroform	1.1	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	Trip Blank-E	Collected	11/20/2022 17:05
Lab Sample ID	3275168024	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
VOLATILE ORGANICS					
Chloroform	1.1	ug/L	1.0	SW846 8260D	#

Results

Client Sample ID	MW-03	Collected	11/20/2022 10:00
Lab Sample ID	3275168001	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.0 U	U,P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 02:15	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	73.8%	29 – 112	11/24/2022 02:15	
Fluoranthene-d10	93951-69-0	92.2%	45 – 130	11/24/2022 02:15	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Bromomethane	1.0 U	U,1,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A

Results

Client Sample ID	MW-03	Collected	11/20/2022 10:00
Lab Sample ID	3275168001	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Hexachlorobutadiene	5.0 U	U,2,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:28	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:28	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.3%	62 – 133	12/01/2022 18:28	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	12/01/2022 18:28	
Dibromofluoromethane	1868-53-7	97.3%	78 – 116	12/01/2022 18:28	
Toluene-d8	2037-26-5	100%	76 – 127	12/01/2022 18:28	

Results

Client Sample ID	MW-27D	Collected	11/20/2022 10:15
Lab Sample ID	3275168002	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.0 U	U,P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 02:42	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	68.7%	29 – 112	11/24/2022 02:42	
Fluoranthene-d10	93951-69-0	88.7%	45 – 130	11/24/2022 02:42	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,26,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,1,2-Trichloroethane	1.0 U	U,30,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,27,28,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2,3-Trichloropropane	2.0 U	U,31,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,29,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,11,P1	ug/L	7.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2-Dibromoethane	1.0 U	U,12,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2-Dichlorobenzene	1.0 U	U,14,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,3-Dichloropropane	1.0 U	U,15,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
2-Butanone	10.0 U	U,7,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
2-Hexanone	5.0 U	U,19,20,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,23,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Acetone	10.0 U	U,3,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Bromoform	1.0 U	U,4,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Bromomethane	1.0 U	U,1,5,6,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Carbon Tetrachloride	1.0 U	U,8,9,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Chlorodibromomethane	1.0 U	U,10,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A

Results

Client Sample ID	MW-27D	Collected	11/20/2022 10:15
Lab Sample ID	3275168002	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Dibromomethane	1.0 U	U,13,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Hexachlorobutadiene	5.0 U	U,2,17,18,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Methyl t-Butyl Ether	1.0 U	U,22,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Naphthalene	2.0 U	U,24,25,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
p-Isopropyltoluene	1.0 U	U,21,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,16,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Vinyl Acetate	5.0 U	U,32,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 18:51	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:51	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.2%	62 – 133	12/01/2022 18:51	
4-Bromofluorobenzene	460-00-4	108%	79 – 114	12/01/2022 18:51	
Dibromofluoromethane	1868-53-7	95.4%	78 – 116	12/01/2022 18:51	
Toluene-d8	2037-26-5	100%	76 – 127	12/01/2022 18:51	

Results

Client Sample ID	MW-43	Collected	11/20/2022 10:30
Lab Sample ID	3275168003	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	9.6	P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 03:09	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	66.4%	29 – 112	11/24/2022 03:09	
Fluoranthene-d10	93951-69-0	83.4%	45 – 130	11/24/2022 03:09	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,1-Dichloroethane	1.7	P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,1-Dichloroethene	20.3	P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Bromomethane	1.0 U	U,1,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A

Results

Client Sample ID	MW-43	Collected	11/20/2022 10:30
Lab Sample ID	3275168003	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Hexachlorobutadiene	5.0 U	U,2,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Methyl t-Butyl Ether	2.2	P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:13	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:13	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.9%	62 – 133	12/01/2022 19:13	
4-Bromofluorobenzene	460-00-4	106%	79 – 114	12/01/2022 19:13	
Dibromofluoromethane	1868-53-7	96.1%	78 – 116	12/01/2022 19:13	
Toluene-d8	2037-26-5	99.6%	76 – 127	12/01/2022 19:13	

Results

Client Sample ID	MW-39	Collected	11/20/2022 11:40
Lab Sample ID	3275168004	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.0 U	U,P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 03:36	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	70.3%	29 – 112	11/24/2022 03:36	
Fluoranthene-d10	93951-69-0	94.4%	45 – 130	11/24/2022 03:36	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Bromomethane	1.0 U	U,1,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A

Results

Client Sample ID	MW-39	Collected	11/20/2022 11:40
Lab Sample ID	3275168004	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Hexachlorobutadiene	5.0 U	U,2,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:36	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:36	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.3%	62 – 133	12/01/2022 19:36	
4-Bromofluorobenzene	460-00-4	108%	79 – 114	12/01/2022 19:36	
Dibromofluoromethane	1868-53-7	98.7%	78 – 116	12/01/2022 19:36	
Toluene-d8	2037-26-5	101%	76 – 127	12/01/2022 19:36	

Results

Client Sample ID	MW-42	Collected	11/20/2022 11:55
Lab Sample ID	3275168005	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	5.4	P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 04:02	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	66.4%	29 – 112	11/24/2022 04:02	
Fluoranthene-d10	93951-69-0	78.2%	45 – 130	11/24/2022 04:02	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Bromomethane	1.0 U	U,1,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A

Results

Client Sample ID	MW-42	Collected	11/20/2022 11:55
Lab Sample ID	3275168005	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Hexachlorobutadiene	5.0 U	U,2,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Toluene	1.9	P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/01/2022 19:59	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/01/2022 19:59	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.9%	62 – 133	12/01/2022 19:59	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	12/01/2022 19:59	
Dibromofluoromethane	1868-53-7	96.2%	78 – 116	12/01/2022 19:59	
Toluene-d8	2037-26-5	98.6%	76 – 127	12/01/2022 19:59	

Results

Client Sample ID	MW-18	Collected	11/20/2022 12:15
Lab Sample ID	3275168006	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.0 U	U,P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 04:29	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	65.1%	29 – 112	11/24/2022 04:29	
Fluoranthene-d10	93951-69-0	89%	45 – 130	11/24/2022 04:29	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A

Results

Client Sample ID	MW-18	Collected	11/20/2022 12:15
Lab Sample ID	3275168006	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 03:41	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 03:41	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.7%	62 – 133	12/02/2022 03:41	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 03:41	
Dibromofluoromethane	1868-53-7	91.8%	78 – 116	12/02/2022 03:41	
Toluene-d8	2037-26-5	94.2%	76 – 127	12/02/2022 03:41	

Results

Client Sample ID	MW-38R	Collected	11/20/2022 12:20
Lab Sample ID	3275168007	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	20.1	P1	ug/L	2.5	SW846 8270E SIM	1	11/24/2022 04:55	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	64.9%	29 – 112	11/24/2022 04:55	
Fluoranthene-d10	93951-69-0	83.7%	45 – 130	11/24/2022 04:55	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,1-Dichloroethane	7.1	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A

Results

Client Sample ID	MW-38R	Collected	11/20/2022 12:20
Lab Sample ID	3275168007	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:04	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:04	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.1%	62 – 133	12/02/2022 04:04	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	12/02/2022 04:04	
Dibromofluoromethane	1868-53-7	93.9%	78 – 116	12/02/2022 04:04	
Toluene-d8	2037-26-5	94.4%	76 – 127	12/02/2022 04:04	

Results

Client Sample ID	MW-40D	Collected	11/20/2022 12:55
Lab Sample ID	3275168008	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.0 U	U,P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 05:22	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	76.5%	29 – 112	11/24/2022 05:22	
Fluoranthene-d10	93951-69-0	96.9%	45 – 130	11/24/2022 05:22	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A

Results

Client Sample ID	MW-40D	Collected	11/20/2022 12:55
Lab Sample ID	3275168008	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:26	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:26	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.1%	62 – 133	12/02/2022 04:26	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 04:26	
Dibromofluoromethane	1868-53-7	91.4%	78 – 116	12/02/2022 04:26	
Toluene-d8	2037-26-5	93.2%	76 – 127	12/02/2022 04:26	

Results

Client Sample ID	MW-05R	Collected	11/20/2022 12:40
Lab Sample ID	3275168009	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.1	P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 05:49	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	56.5%	29 – 112	11/24/2022 05:49	
Fluoranthene-d10	93951-69-0	73.6%	45 – 130	11/24/2022 05:49	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,1,1-Trichloroethane	1.0	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A

Results

Client Sample ID	MW-05R	Collected	11/20/2022 12:40
Lab Sample ID	3275168009	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 04:49	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 04:49	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.3%	62 – 133	12/02/2022 04:49	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 04:49	
Dibromofluoromethane	1868-53-7	94.1%	78 – 116	12/02/2022 04:49	
Toluene-d8	2037-26-5	94.6%	76 – 127	12/02/2022 04:49	

Results

Client Sample ID	MW-44	Collected	11/20/2022 14:10
Lab Sample ID	3275168010	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	4.2	33,P1	ug/L	1.0	SW846 8270E SIM	1	11/24/2022 06:15	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	67.6%	29 – 112	11/24/2022 06:15	
Fluoranthene-d10	93951-69-0	91.1%	45 – 130	11/24/2022 06:15	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,1,1-Trichloroethane	8.0	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,1-Dichloroethane	2.4	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,1-Dichloroethene	3.9	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A

Results

Client Sample ID	MW-44	Collected	11/20/2022 14:10
Lab Sample ID	3275168010	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:12	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:12	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.4%	62 – 133	12/02/2022 05:12	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 05:12	
Dibromofluoromethane	1868-53-7	93.7%	78 – 116	12/02/2022 05:12	
Toluene-d8	2037-26-5	94.6%	76 – 127	12/02/2022 05:12	

Results

Client Sample ID	MW-21D	Collected	11/20/2022 14:30
Lab Sample ID	3275168011	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	5.5	P1	ug/L	1.0	SW846 8270E SIM	1	11/28/2022 22:42	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	60.8%	29 – 112	11/28/2022 22:42	
Fluoranthene-d10	93951-69-0	81.7%	45 – 130	11/28/2022 22:42	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,1-Dichloroethene	17.6	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A

Results

Client Sample ID	MW-21D	Collected	11/20/2022 14:30
Lab Sample ID	3275168011	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Methyl t-Butyl Ether	1.2	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:35	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:35	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95%	62 – 133	12/02/2022 05:35	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	12/02/2022 05:35	
Dibromofluoromethane	1868-53-7	93.5%	78 – 116	12/02/2022 05:35	
Toluene-d8	2037-26-5	94.3%	76 – 127	12/02/2022 05:35	

Results

Client Sample ID	MW-41D	Collected	11/20/2022 14:45
Lab Sample ID	3275168012	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.1	34,P1	ug/L	1.0	SW846 8270E SIM	1	11/28/2022 23:09	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	65.1%	29 – 112	11/28/2022 23:09	
Fluoranthene-d10	93951-69-0	97.8%	45 – 130	11/28/2022 23:09	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A

Results

Client Sample ID	MW-41D	Collected	11/20/2022 14:45
Lab Sample ID	3275168012	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 05:58	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 05:58	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.3%	62 – 133	12/02/2022 05:58	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 05:58	
Dibromofluoromethane	1868-53-7	93.3%	78 – 116	12/02/2022 05:58	
Toluene-d8	2037-26-5	94.8%	76 – 127	12/02/2022 05:58	

Results

Client Sample ID	MW-09	Collected	11/20/2022 15:20
Lab Sample ID	3275168013	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	7.5	P1	ug/L	1.0	SW846 8270E SIM	1	11/29/2022 00:56	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	74.7%	29 – 112	11/29/2022 00:56	
Fluoranthene-d10	93951-69-0	104%	45 – 130	11/29/2022 00:56	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,1-Dichloroethane	1.9	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,1-Dichloroethene	35.7	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A

Results

Client Sample ID	MW-09	Collected	11/20/2022 15:20
Lab Sample ID	3275168013	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:20	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:20	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.4%	62 – 133	12/02/2022 06:20	
4-Bromofluorobenzene	460-00-4	105%	79 – 114	12/02/2022 06:20	
Dibromofluoromethane	1868-53-7	94.3%	78 – 116	12/02/2022 06:20	
Toluene-d8	2037-26-5	96.7%	76 – 127	12/02/2022 06:20	

Results

Client Sample ID	MW-23D	Collected	11/20/2022 15:30
Lab Sample ID	3275168014	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	59.6	P1	ug/L	5.4	SW846 8270E SIM	4	11/29/2022 23:38	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	71.3%	29 – 112	11/29/2022 01:23	
2-Methylnapthalene-d10	7297-45-2	76.2%	29 – 112	11/29/2022 23:38	
Fluoranthene-d10	93951-69-0	89.3%	45 – 130	11/29/2022 01:23	
Fluoranthene-d10	93951-69-0	95.7%	45 – 130	11/29/2022 23:38	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,1,1-Trichloroethane	9.7	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,1-Dichloroethane	33.6	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,1-Dichloroethene	140	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2-Dichloroethane	1.7	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A

Results

Client Sample ID	MW-23D	Collected	11/20/2022 15:30
Lab Sample ID	3275168014	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 06:43	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 06:43	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.8%	62 – 133	12/02/2022 06:43	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	12/02/2022 06:43	
Dibromofluoromethane	1868-53-7	93.8%	78 – 116	12/02/2022 06:43	
Toluene-d8	2037-26-5	94.4%	76 – 127	12/02/2022 06:43	

Results

Client Sample ID	MW-46D	Collected	11/20/2022 16:00
Lab Sample ID	3275168015	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	40.1	P1	ug/L	6.3	SW846 8270E SIM	4	11/30/2022 00:31	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	60.9%	29 – 112	11/29/2022 02:16	
2-Methylnapthalene-d10	7297-45-2	65.1%	29 – 112	11/30/2022 00:31	
Fluoranthene-d10	93951-69-0	71.1%	45 – 130	11/29/2022 02:16	
Fluoranthene-d10	93951-69-0	78.8%	45 – 130	11/30/2022 00:31	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,1,1-Trichloroethane	3.6	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,1-Dichloroethane	15.7	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,1-Dichloroethene	74.9	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A

Results

Client Sample ID	MW-46D	Collected	11/20/2022 16:00
Lab Sample ID	3275168015	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 07:06	PDK	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 07:06	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.9%	62 – 133	12/02/2022 07:06	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	12/02/2022 07:06	
Dibromofluoromethane	1868-53-7	94.7%	78 – 116	12/02/2022 07:06	
Toluene-d8	2037-26-5	94.4%	76 – 127	12/02/2022 07:06	

Results

Client Sample ID	MW-01	Collected	11/20/2022 16:10
Lab Sample ID	3275168016	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	1.0 U	U,P1	ug/L	1.0	SW846 8270E SIM	1	11/29/2022 02:43	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	69.3%	29 – 112	11/29/2022 02:43	
Fluoranthene-d10	93951-69-0	89.1%	45 – 130	11/29/2022 02:43	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A

Results

Client Sample ID	MW-01	Collected	11/20/2022 16:10
Lab Sample ID	3275168016	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 17:52	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 17:52	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.3%	62 – 133	12/02/2022 17:52	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	12/02/2022 17:52	
Dibromofluoromethane	1868-53-7	96.8%	78 – 116	12/02/2022 17:52	
Toluene-d8	2037-26-5	95%	76 – 127	12/02/2022 17:52	

Results

Client Sample ID	MW-01D	Collected	11/20/2022 16:20
Lab Sample ID	3275168017	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	6.8	P1	ug/L	1.0	SW846 8270E SIM	1	11/29/2022 03:10	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	74.5%	29 – 112	11/29/2022 03:10	
Fluoranthene-d10	93951-69-0	99.3%	45 – 130	11/29/2022 03:10	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,1,1-Trichloroethane	1.0	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,1-Dichloroethane	3.0	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,1-Dichloroethene	16.8	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A

Results

Client Sample ID	MW-01D	Collected	11/20/2022 16:20
Lab Sample ID	3275168017	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 16:21	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 16:21	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.5%	62 – 133	12/02/2022 16:21	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 16:21	
Dibromofluoromethane	1868-53-7	98%	78 – 116	12/02/2022 16:21	
Toluene-d8	2037-26-5	95.5%	76 – 127	12/02/2022 16:21	

Results

Client Sample ID	MW-22D	Collected	11/20/2022 16:30
Lab Sample ID	3275168018	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	2.7	P1	ug/L	1.0	SW846 8270E SIM	1	11/29/2022 03:36	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	75.3%	29 – 112	11/29/2022 03:36	
Fluoranthene-d10	93951-69-0	99.6%	45 – 130	11/29/2022 03:36	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,1-Dichloroethene	6.1	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A

Results

Client Sample ID	MW-22D	Collected	11/20/2022 16:30
Lab Sample ID	3275168018	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 15:58	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 15:58	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.8%	62 – 133	12/02/2022 15:58	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	12/02/2022 15:58	
Dibromofluoromethane	1868-53-7	97.7%	78 – 116	12/02/2022 15:58	
Toluene-d8	2037-26-5	94.3%	76 – 127	12/02/2022 15:58	

Results

Client Sample ID	MW-20	Collected	11/20/2022 16:45
Lab Sample ID	3275168019	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	560	P1	ug/L	132	SW846 8270E SIM	100	12/01/2022 11:46	S7M	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	62.8%	29 – 112	11/29/2022 04:03	
2-Methylnapthalene-d10	7297-45-2	0*%	29 – 112	12/01/2022 11:46	
Fluoranthene-d10	93951-69-0	98.9%	45 – 130	11/29/2022 04:03	
Fluoranthene-d10	93951-69-0	0*%	45 – 130	12/01/2022 11:46	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,1,2-Trichloroethane	2.4	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,1-Dichloroethane	258	P1	ug/L	10.0	SW846 8260D	10	12/05/2022 22:13	VLM	A
1,1-Dichloroethene	348	P1	ug/L	10.0	SW846 8260D	10	12/05/2022 22:13	VLM	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2-Dichloroethane	9.7	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A

Results

Client Sample ID	MW-20	Collected	11/20/2022 16:45
Lab Sample ID	3275168019	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
cis-1,2-Dichloroethene	2.6	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Trichloroethene	2.7	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:15	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:15	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	83.2%	62 – 133	12/05/2022 22:13	
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	12/02/2022 18:15	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	12/05/2022 22:13	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/02/2022 18:15	
Dibromofluoromethane	1868-53-7	88.9%	78 – 116	12/05/2022 22:13	
Dibromofluoromethane	1868-53-7	98.8%	78 – 116	12/02/2022 18:15	
Toluene-d8	2037-26-5	88.7%	76 – 127	12/05/2022 22:13	
Toluene-d8	2037-26-5	96.3%	76 – 127	12/02/2022 18:15	

Results

Client Sample ID	MW-4R	Collected	11/20/2022 16:55
Lab Sample ID	3275168020	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	57.3	P1	ug/L	5.3	SW846 8270E SIM	4	11/30/2022 01:25	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	72.4%	29 – 112	11/29/2022 04:30	
2-Methylnapthalene-d10	7297-45-2	79.7%	29 – 112	11/30/2022 01:25	
Fluoranthene-d10	93951-69-0	98.6%	45 – 130	11/29/2022 04:30	
Fluoranthene-d10	93951-69-0	99.4%	45 – 130	11/30/2022 01:25	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,1,1-Trichloroethane	1.1	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,1-Dichloroethane	37.4	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,1-Dichloroethene	76.0	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2-Dichloroethane	1.1	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A

Results

Client Sample ID	MW-4R	Collected	11/20/2022 16:55
Lab Sample ID	3275168020	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 18:38	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 18:38	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.5%	62 – 133	12/02/2022 18:38	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	12/02/2022 18:38	
Dibromofluoromethane	1868-53-7	96.5%	78 – 116	12/02/2022 18:38	
Toluene-d8	2037-26-5	93.1%	76 – 127	12/02/2022 18:38	

Results

Client Sample ID	MW-16	Collected	11/20/2022 17:05
Lab Sample ID	3275168021	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	143	P1	ug/L	28.6	SW846 8270E SIM	20	12/01/2022 12:13	S7M	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	55.7%	29 – 112	11/29/2022 04:56	
2-Methylnapthalene-d10	7297-45-2	0*%	29 – 112	12/01/2022 12:13	
Fluoranthene-d10	93951-69-0	77%	45 – 130	11/29/2022 04:56	
Fluoranthene-d10	93951-69-0	0*%	45 – 130	12/01/2022 12:13	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,1,1-Trichloroethane	2960	P1	ug/L	100	SW846 8260D	100	12/05/2022 22:36	VLM	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,1-Dichloroethane	3290	P1	ug/L	100	SW846 8260D	100	12/05/2022 22:36	VLM	A
1,1-Dichloroethene	4290	P1	ug/L	100	SW846 8260D	100	12/05/2022 22:36	VLM	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Acetone	50.1	P1	ug/L	10.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Chloroethane	136	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A

Results

Client Sample ID	MW-16	Collected	11/20/2022 17:05
Lab Sample ID	3275168021	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Ethylbenzene	2.2	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
mp-Xylene	6.5	P1	ug/L	2.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
o-Xylene	3.2	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Tetrachloroethene	9.4	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Toluene	1.4	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Total Xylenes	9.7	P1	ug/L	3.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Trichloroethene	28.0	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 19:00	TMP	A
Vinyl Chloride	13.2	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 19:00	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	82.5%	62 – 133	12/05/2022 22:36	
1,2-Dichloroethane-d4	17060-07-0	98%	62 – 133	12/02/2022 19:00	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/05/2022 22:36	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	12/02/2022 19:00	
Dibromofluoromethane	1868-53-7	87.4%	78 – 116	12/05/2022 22:36	
Dibromofluoromethane	1868-53-7	95.6%	78 – 116	12/02/2022 19:00	
Toluene-d8	2037-26-5	88.2%	76 – 127	12/05/2022 22:36	
Toluene-d8	2037-26-5	93.7%	76 – 127	12/02/2022 19:00	

Results

Client Sample ID	Trip Blank-A	Collected	11/20/2022 17:05
Lab Sample ID	3275168022	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Chloroform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A

Results

Client Sample ID	Trip Blank-A	Collected	11/20/2022 17:05
Lab Sample ID	3275168022	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 12:55	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 12:55	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96%	62 – 133	12/02/2022 12:55	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	12/02/2022 12:55	
Dibromofluoromethane	1868-53-7	95.4%	78 – 116	12/02/2022 12:55	
Toluene-d8	2037-26-5	95.4%	76 – 127	12/02/2022 12:55	

Results

Client Sample ID	Trip Blank-B	Collected	11/20/2022 17:05
Lab Sample ID	3275168023	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Chloroform	1.1	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A

Results

Client Sample ID	Trip Blank-B	Collected	11/20/2022 17:05
Lab Sample ID	3275168023	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:18	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:18	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.6%	62 – 133	12/02/2022 13:18	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	12/02/2022 13:18	
Dibromofluoromethane	1868-53-7	94.3%	78 – 116	12/02/2022 13:18	
Toluene-d8	2037-26-5	93.7%	76 – 127	12/02/2022 13:18	

Results

Client Sample ID	Trip Blank-E	Collected	11/20/2022 17:05
Lab Sample ID	3275168024	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,1,1-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,1,2-Trichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,1-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,1-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,1-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2,3-Trichloropropane	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U,P1	ug/L	7.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2-Dibromoethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2-Dichloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,3-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,3-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
1,4-Dichlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
2,2-Dichloropropane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
2-Butanone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
2-Hexanone	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Acetone	10.0 U	U,P1	ug/L	10.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Benzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Bromobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Bromochloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Bromodichloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Bromoform	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Bromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Carbon Tetrachloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Chlorobenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Chlorodibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Chloroethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Chloroform	1.1	P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Chloromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
cis-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
cis-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Dibromomethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Dichlorodifluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Diisopropyl ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Ethylbenzene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Hexachlorobutadiene	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Methyl t-Butyl Ether	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Methylene Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
mp-Xylene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Naphthalene	2.0 U	U,P1	ug/L	2.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
o-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A

Results

Client Sample ID	Trip Blank-E	Collected	11/20/2022 17:05
Lab Sample ID	3275168024	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
o-Xylene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
p-Chlorotoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
p-Isopropyltoluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Styrene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Tetrachloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Toluene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Total Xylenes	3.0 U	U,P1	ug/L	3.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
trans-1,2-Dichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
trans-1,3-Dichloropropene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Trichloroethene	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Trichlorofluoromethane	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Vinyl Acetate	5.0 U	U,P1	ug/L	5.0	SW846 8260D	1	12/02/2022 13:41	TMP	A
Vinyl Chloride	1.0 U	U,P1	ug/L	1.0	SW846 8260D	1	12/02/2022 13:41	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.5%	62 – 133	12/02/2022 13:41	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	12/02/2022 13:41	
Dibromofluoromethane	1868-53-7	95.9%	78 – 116	12/02/2022 13:41	
Toluene-d8	2037-26-5	96.1%	76 – 127	12/02/2022 13:41	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3275168001	MW-03	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168002	MW-27D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168003	MW-43	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168004	MW-39	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168005	MW-42	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168006	MW-18	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168007	MW-38R	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168008	MW-40D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168009	MW-05R	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168010	MW-44	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168011	MW-21D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168012	MW-41D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168013	MW-09	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168014	MW-23D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168015	MW-46D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168016	MW-01	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168017	MW-01D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168018	MW-22D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168019	MW-20	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3275168020	MW-4R	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275168021	MW-16	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3275168022	Trip Blank-A	SW846 8260D	N/A	
3275168023	Trip Blank-B	SW846 8260D	N/A	
3275168024	Trip Blank-E	SW846 8260D	N/A	

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM

QC Batch

QC Batch	912104	Prep Method	SW846 3510C
Date	11/23/2022 13:25	Analysis Method	SW846 8270E SIM
Tech.	LDC		

Associated Samples

3275168001	3275168010	3275168002	3275168003
3275168004	3275168005	3275168006	3275168007
3275168008	3275168009		

Duplicate 3590700 (DUP) 3274995002 (non-Project Sample) For QC Batch 912104

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)				Qualifiers
1,4-Dioxane	123-91-1	DUP	0	0	RPD	0	(Max-30)	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	DUP	0.68	1	68.3	29 - 112	
Fluoranthene-d10	93951-69-0	DUP	0.90	1	90.1	45 - 130	

Method Blank 3590698 (MB) Created on 11/22/2022 14:43 For QC Batch 912104

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.69	1	68.9	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	0.94	1	93.6	45 - 130	

Lab Control Standard 3590699 (LCS) Created on 11/22/2022 14:43 For QC Batch 912104

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.45		1	45.2	22 - 75		U

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.70	1	70	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.98	1	98.5	45 - 130	

Matrix Spike 3590701 (MS) 3275168010 For QC Batch 912104

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	MS	5.40	4.20	1.30	97.6*	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	MS	1	1.30	78.5	29 - 112	
Fluoranthene-d10	93951-69-0	MS	1.20	1.30	90.3	45 - 130	

QC Batch

QC Batch	912308	Prep Method	SW846 3510C
Date	11/25/2022 06:25	Analysis Method	SW846 8270E SIM
Tech.	MXL		

Associated Samples

3275168016	3275168017	3275168018	3275168019
3275168020	3275168011	3275168012	3275168013
3275168014	3275168015	3275168021	

Method Blank 3591157 (MB) Created on 11/23/2022 08:33 For QC Batch 912308

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.75	1	75.4	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	1.10	1	108	45 - 130	

Lab Control Standard 3591158 (LCS) Created on 11/23/2022 08:33 For QC Batch 912308

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.55		1	55.3	22 - 75		U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.78	1	78.2	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.99	1	99	45 - 130	

Matrix Spike 3591159 (MS) 3275168012 For QC Batch 912308

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	MS	1.30	1.10	1	14.2*	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	MS	0.79	1	78.8	29 - 112	
Fluoranthene-d10	93951-69-0	MS	0.97	1	97.3	45 - 130	

Duplicate 3591160 (DUP) 3275168014 For QC Batch 912308

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)		Qualifiers
1,4-Dioxane	123-91-1	DUP	62.8599	59.6334	RPD 5.27 (Max-30)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	DUP	0.72	1	71.7	29 - 112	
2-Methylnapthalene-d10	7297-45-2	DUP	0	1	0*	29 - 112	
Fluoranthene-d10	93951-69-0	DUP	0.87	1	86.8	45 - 130	
Fluoranthene-d10	93951-69-0	DUP	0	1	0*	45 - 130	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS

QC Batch

QC Batch	915266	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3275168001 3275168002 3275168003 3275168004 3275168005

Method Blank 3594113 (MB) Created on 12/01/2022 10:53 For QC Batch 915266

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	27.90	30	93	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	31.40	30	105	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	29	30	96.6	78 - 116	
Toluene-d8	2037-26-5	BLK	29.90	30	99.6	76 - 127	

Lab Control Standard 3594114 (LCS) Created on 12/01/2022 10:53 For QC Batch 915266

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	21.10		20	105	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	21.30		20	106	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.50		20	103	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	20.80		20	104	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	21		20	105	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	21.50		20	108	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	21.60		20	108	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	20.20		20	101	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	20.80		20	104	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.60		20	103	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	17.30		20	86.3	59 - 133		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dibromoethane	106-93-4	LCS	20.60		20	103	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	20.80		20	104	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	20.60		20	103	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	21.20		20	106	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	21.70		20	108	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	20		20	99.9	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	22		20	110	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	21.60		20	108	64 - 129		
2-Butanone	78-93-3	LCS	75.90		100	75.9	50 - 152		
2-Hexanone	591-78-6	LCS	93		100	93	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	109		100	109	71 - 146		
Acetone	67-64-1	LCS	90.30		100	90.3	40 - 151		
Benzene	71-43-2	LCS	21.50		20	108	80 - 124		
Bromobenzene	108-86-1	LCS	22.10		20	110	81 - 119		
Bromochloromethane	74-97-5	LCS	22		20	110	73 - 117		
Bromodichloromethane	75-27-4	LCS	21.20		20	106	79 - 126		
Bromoform	75-25-2	LCS	20.70		20	104	70 - 123		
Bromomethane	74-83-9	LCS	33.80		20	169*	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	24.70		20	124	62 - 132		
Chlorobenzene	108-90-7	LCS	20.80		20	104	85 - 117		
Chlorodibromomethane	124-48-1	LCS	20.70		20	104	77 - 122		
Chloroethane	75-00-3	LCS	21.30		20	106	51 - 142		
Chloroform	67-66-3	LCS	20.30		20	102	78 - 122		
Chloromethane	74-87-3	LCS	21.70		20	108	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	21.50		20	108	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	20.30		20	101	81 - 121		
Dibromomethane	74-95-3	LCS	20.50		20	102	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	24.80		20	124	17 - 166		
Diisopropyl ether	108-20-3	LCS	21.70		20	108	74 - 131		
Ethylbenzene	100-41-4	LCS	21.50		20	107	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	30.50		20	153*	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	21.20		20	106	69 - 115		
Methylene Chloride	75-09-2	LCS	20.70		20	104	76 - 121		
mp-Xylene	108383/106423	LCS	44.20		40	111	79 - 125		
Naphthalene	91-20-3	LCS	19.10		20	95.3	56 - 134		
o-Chlorotoluene	95-49-8	LCS	22.50		20	113	78 - 126		
o-Xylene	95-47-6	LCS	21		20	105	79 - 124		
p-Chlorotoluene	106-43-4	LCS	22.80		20	114	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	23.70		20	118	72 - 123		
Styrene	100-42-5	LCS	22.10		20	110	79 - 123		
Tetrachloroethene	127-18-4	LCS	20.10		20	100	72 - 124		
Toluene	108-88-3	LCS	21.40		20	107	80 - 125		
Total Xylenes	1330-20-7	LCS	65.30		60	109	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	20.90		20	105	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	21.10		20	106	78 - 126		
Trichloroethene	79-01-6	LCS	20.30		20	102	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	22.40		20	112	38 - 123		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Vinyl Acetate	108-05-4	LCS	20.20		20	101	58 - 136		
Vinyl Chloride	75-01-4	LCS	22.70		20	114	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	27.90	30	92.9	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	31.30	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	28.50	30	94.9	78 - 116	
Toluene-d8	2037-26-5	LCS	29.20	30	97.5	76 - 127	

Matrix Spike 3594359 (MS) 3275168002 For QC Batch 915266

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3594360 (MSD) 3275168002 For QC Batch 915266

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	19.70	0	20	98.6	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	22.30	0	20	112	78 - 121	RPD 12.50 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	21.50	0	20	107	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	23.70	0	20	119	66 - 130	RPD 9.96 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	16.50	0	20	82.3	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.50	0	20	108	74 - 135	RPD 26.80* (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	17.80	0	20	89.2	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	21.30	0	20	106	82 - 126	RPD 17.60* (Max-15)	
1,1-Dichloroethane	75-34-3	MS	20.80	0	20	104	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	22.80	0	20	114	78 - 124	RPD 9.09 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	22.20	0	20	111	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	24	0	20	120	63 - 128	RPD 7.75 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	22.30	0	20	112	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	24.40	0	20	122	76 - 126	RPD 8.71 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	9.60	0	20	48.2*	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	19.20	0	20	95.8	61 - 126	RPD 66.20* (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	16.50	0	20	82.5	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	21.90	0	20	110	75 - 132	RPD 28.20* (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	13.50	0	20	67.4	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	19.60	0	20	97.9	67 - 123	RPD 36.90* (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	12.20	0	20	61.2	59 - 133		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	18.80	0	20	94.2	59 - 133	RPD 42.40* (Max-26)	
1,2-Dibromoethane	106-93-4	MS	17.40	0	20	87.2	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	21.30	0	20	106	80 - 124	RPD 19.70* (Max-19)	
1,2-Dichlorobenzene	95-50-1	MS	17.90	0	20	89.7	82 - 118		
1,2-Dichlorobenzene	95-50-1	MSD	21.30	0	20	106	82 - 118	RPD 17.10* (Max-15)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dichloroethane	107-06-2	MS	18.80	0	20	94.2	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	21.90	0	20	109	70 - 133	RPD 15 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	20.10	0	20	100	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	22.90	0	20	114	81 - 127	RPD 13.10 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	19.50	0	20	97.3	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	22.70	0	20	113	81 - 118	RPD 15.20 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	17.50	0	20	87.4	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	20.70	0	20	103	82 - 126	RPD 16.70* (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	19.90	0	20	99.7	81 - 116		
1,4-Dichlorobenzene	106-46-7	MSD	22.90	0	20	114	81 - 116	RPD 13.60 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	22.70	0	20	114	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	24.60	0	20	123	64 - 129	RPD 7.92 (Max-18)	
2-Butanone	78-93-3	MS	50.30	0	100	50.3	50 - 152		
2-Butanone	78-93-3	MSD	85.80	0	100	85.8	50 - 152	RPD 52.20* (Max-16)	
2-Hexanone	591-78-6	MS	63.20	0	100	63.2*	65 - 154		
2-Hexanone	591-78-6	MSD	101	0	100	101	65 - 154	RPD 46.30* (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	75.80	0	100	75.8	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	113	0	100	113	71 - 146	RPD 39.30* (Max-16)	
Acetone	67-64-1	MS	54.50	0	100	54.5	40 - 151		
Acetone	67-64-1	MSD	97.30	0	100	97.3	40 - 151	RPD 56.40* (Max-40)	
Benzene	71-43-2	MS	21.20	0	20	106	80 - 124		
Benzene	71-43-2	MSD	23.20	0	20	116	80 - 124	RPD 9.20 (Max-26)	
Bromobenzene	108-86-1	MS	20.70	0	20	103	81 - 119		
Bromobenzene	108-86-1	MSD	23.10	0	20	116	81 - 119	RPD 11.20 (Max-17)	
Bromochloromethane	74-97-5	MS	20.60	0	20	103	73 - 117		
Bromochloromethane	74-97-5	MSD	23.40	0	20	117	73 - 117	RPD 12.40 (Max-19)	
Bromodichloromethane	75-27-4	MS	19.70	0	20	98.6	79 - 126		
Bromodichloromethane	75-27-4	MSD	22.80	0	20	114	79 - 126	RPD 14.60 (Max-16)	
Bromoform	75-25-2	MS	17.10	0	20	85.7	70 - 123		
Bromoform	75-25-2	MSD	21.20	0	20	106	70 - 123	RPD 21.20* (Max-16)	
Bromomethane	74-83-9	MS	47.20	0.62	20	233*	45 - 148		
Bromomethane	74-83-9	MSD	40.10	0.62	20	197*	45 - 148	RPD 16.20 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	22.30	0	20	112	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	27.90	0	20	140*	62 - 132	RPD 22.20* (Max-17)	
Chlorobenzene	108-90-7	MS	19.70	0	20	98.4	85 - 117		
Chlorobenzene	108-90-7	MSD	22.10	0	20	110	85 - 117	RPD 11.50 (Max-15)	
Chlorodibromomethane	124-48-1	MS	18	0	20	90.2	77 - 122		
Chlorodibromomethane	124-48-1	MSD	21.40	0	20	107	77 - 122	RPD 17.10* (Max-15)	
Chloroethane	75-00-3	MS	21.50	0	20	107	51 - 142		
Chloroethane	75-00-3	MSD	22	0	20	110	51 - 142	RPD 2.64 (Max-24)	
Chloroform	67-66-3	MS	19.70	0	20	98.7	78 - 122		
Chloroform	67-66-3	MSD	22.10	0	20	111	78 - 122	RPD 11.40 (Max-16)	
Chloromethane	74-87-3	MS	21.10	0	20	105	38 - 156		
Chloromethane	74-87-3	MSD	22.10	0	20	110	38 - 156	RPD 4.62 (Max-27)	
cis-1,2-Dichloroethene	156-59-2	MS	21.20	0	20	106	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	23.20	0	20	116	78 - 125	RPD 9.20 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	18.60	0	20	93.1	81 - 121		
cis-1,3-Dichloropropene	10061-01-5	MSD	21.20	0	20	106	81 - 121	RPD 13.10 (Max-16)	
Dibromomethane	74-95-3	MS	18.40	0	20	91.9	81 - 125		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Dibromomethane	74-95-3	MSD	21.80	0	20	109	81 - 125	RPD 17.10* (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	24.90	0	20	124	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	26.40	0	20	132	17 - 166	RPD 6 (Max-24)	
Diisopropyl ether	108-20-3	MS	19.60	0	20	98.2	74 - 131		
Diisopropyl ether	108-20-3	MSD	22.70	0	20	114	74 - 131	RPD 14.70 (Max-15)	
Ethylbenzene	100-41-4	MS	20.90	0	20	105	80 - 124		
Ethylbenzene	100-41-4	MSD	23.40	0	20	117	80 - 124	RPD 11 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	28.50	0	20	142*	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	30.60	0	20	153*	55 - 128	RPD 7.09 (Max-35)	
Methyl t-Butyl Ether	1634-04-4	MS	17.90	0.43	20	87.3	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	22.60	0.43	20	111	69 - 115	RPD 23.20* (Max-20)	
Methylene Chloride	75-09-2	MS	19.90	0	20	99.5	76 - 121		
Methylene Chloride	75-09-2	MSD	22.20	0	20	111	76 - 121	RPD 11 (Max-17)	
mp-Xylene	108383/106423	MS	42.60	0	40	106	79 - 125		
mp-Xylene	108383/106423	MSD	48	0	40	120	79 - 125	RPD 12 (Max-21)	
Naphthalene	91-20-3	MS	8.40	0	20	41.9*	56 - 134		
Naphthalene	91-20-3	MSD	17.50	0	20	87.6	56 - 134	RPD 70.50* (Max-40)	
o-Chlorotoluene	95-49-8	MS	21.50	0	20	108	78 - 126		
o-Chlorotoluene	95-49-8	MSD	24	0	20	120	78 - 126	RPD 11.10 (Max-17)	
o-Xylene	95-47-6	MS	19.70	0	20	98.4	79 - 124		
o-Xylene	95-47-6	MSD	22.30	0	20	111	79 - 124	RPD 12.50 (Max-19)	
p-Chlorotoluene	106-43-4	MS	21.70	0	20	109	78 - 125		
p-Chlorotoluene	106-43-4	MSD	24.50	0	20	122	78 - 125	RPD 12 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	21.80	0	20	109	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	25	0	20	125*	72 - 123	RPD 14 (Max-17)	
Styrene	100-42-5	MS	21.90	0	20	110	79 - 123		
Styrene	100-42-5	MSD	24.40	0	20	122	79 - 123	RPD 10.60 (Max-16)	
Tetrachloroethene	127-18-4	MS	19.50	0	20	97.4	72 - 124		
Tetrachloroethene	127-18-4	MSD	21.30	0	20	107	72 - 124	RPD 9.17 (Max-38)	
Toluene	108-88-3	MS	21.10	0	20	105	80 - 125		
Toluene	108-88-3	MSD	23	0	20	115	80 - 125	RPD 8.92 (Max-20)	
Total Xylenes	1330-20-7	MS	62.20	0	60	104	79 - 125		
Total Xylenes	1330-20-7	MSD	70.30	0	60	117	79 - 125	RPD 12.20 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	21.50	0	20	108	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	23.10	0	20	115	71 - 122	RPD 7.01 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	18	0	20	90.1	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	21.90	0	20	109	78 - 126	RPD 19.20* (Max-18)	
Trichloroethene	79-01-6	MS	20	0	20	100	77 - 124		
Trichloroethene	79-01-6	MSD	22.50	0	20	112	77 - 124	RPD 11.50 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	21.80	0	20	109	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	23.70	0	20	118	38 - 123	RPD 8.16 (Max-23)	
Vinyl Acetate	108-05-4	MS	16.50	0	20	82.4	58 - 136		
Vinyl Acetate	108-05-4	MSD	20.50	0	20	103	58 - 136	RPD 21.90* (Max-17)	
Vinyl Chloride	75-01-4	MS	23.30	0	20	117	27 - 138		
Vinyl Chloride	75-01-4	MSD	24	0	20	120	27 - 138	RPD 2.72 (Max-40)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	27.30	30	91	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	28.20	30	93.8	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	32.40	30	108	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	31.10	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	MS	29.20	30	97.3	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	29	30	96.8	78 - 116	
Toluene-d8	2037-26-5	MS	29.30	30	97.7	76 - 127	
Toluene-d8	2037-26-5	MSD	28.80	30	96.1	76 - 127	

QC Batch

QC Batch	915795	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3275168009	3275168015	3275168010	3275168011
3275168006	3275168012	3275168007	3275168013
3275168008	3275168014		

Matrix Spike 3594440 (MS) 3275166015 (non-Project Sample) For QC Batch 915795

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3594441 (MSD) 3275166015 (non-Project Sample) For QC Batch 915795

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	20.70	0	20	104	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	20.80	0	20	104	78 - 121	RPD 0.43 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	24.10	3.70	20	102	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	23.60	3.70	20	99.7	66 - 130	RPD 1.84 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	19.20	0	20	96.2	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	19.30	0	20	96.5	74 - 135	RPD 0.30 (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	19.50	0	20	97.4	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	19.80	0	20	98.9	82 - 126	RPD 1.51 (Max-15)	
1,1-Dichloroethane	75-34-3	MS	25.20	7.30	20	90	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	25.40	7.30	20	90.5	78 - 124	RPD 0.43 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	46.90	29.10	20	88.8	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	44.90	29.10	20	79	63 - 128	RPD 4.27 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	19.70	0	20	98.7	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	19.70	0	20	98.7	76 - 126	RPD 0.0020 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	17.90	0	20	89.5	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	19.70	0	20	98.5	61 - 126	RPD 9.55 (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	19.10	0	20	95.5	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	18.80	0	20	94	75 - 132	RPD 1.63 (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	17.60	0	20	87.8	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	19	0	20	95	67 - 123	RPD 7.97 (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	16.80	0	20	84	59 - 133		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dibromo-3-chloropropane	96-12-8	MSD	17.10	0	20	85.5	59 - 133	RPD 1.77 (Max-26)	
1,2-Dibromoethane	106-93-4	MS	19.70	0	20	98.4	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	19.90	0	20	99.4	80 - 124	RPD 1 (Max-19)	
1,2-Dichlorobenzene	95-50-1	MS	19	0	20	94.8	82 - 118		
1,2-Dichlorobenzene	95-50-1	MSD	19.20	0	20	95.8	82 - 118	RPD 1.13 (Max-15)	
1,2-Dichloroethane	107-06-2	MS	19	0.39	20	93.2	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	19.30	0.39	20	94.4	70 - 133	RPD 1.25 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	18.40	0	20	91.9	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	18.70	0	20	93.5	81 - 127	RPD 1.66 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	19.40	0	20	97.1	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	19.10	0	20	95.6	81 - 118	RPD 1.59 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	19	0	20	94.9	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	19.30	0	20	96.3	82 - 126	RPD 1.45 (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	19.40	0	20	96.9	81 - 116		
1,4-Dichlorobenzene	106-46-7	MSD	19.30	0	20	96.5	81 - 116	RPD 0.39 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	20	0	20	100	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	19.70	0	20	98.4	64 - 129	RPD 1.75 (Max-18)	
2-Butanone	78-93-3	MS	88.60	0	100	88.6	50 - 152		
2-Butanone	78-93-3	MSD	90.10	0	100	90.1	50 - 152	RPD 1.69 (Max-16)	
2-Hexanone	591-78-6	MS	95.60	0	100	95.6	65 - 154		
2-Hexanone	591-78-6	MSD	96.30	0	100	96.3	65 - 154	RPD 0.80 (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	96.40	0	100	96.4	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	98	0	100	98	71 - 146	RPD 1.64 (Max-16)	
Acetone	67-64-1	MS	77.80	0	100	77.8	40 - 151		
Acetone	67-64-1	MSD	81.90	0	100	81.9	40 - 151	RPD 5.22 (Max-40)	
Benzene	71-43-2	MS	19.20	0	20	96	80 - 124		
Benzene	71-43-2	MSD	19	0	20	95.1	80 - 124	RPD 0.90 (Max-26)	
Bromobenzene	108-86-1	MS	20.10	0	20	100	81 - 119		
Bromobenzene	108-86-1	MSD	20.10	0	20	101	81 - 119	RPD 0.06 (Max-17)	
Bromochloromethane	74-97-5	MS	19.90	0	20	99.4	73 - 117		
Bromochloromethane	74-97-5	MSD	20.10	0	20	101	73 - 117	RPD 1.28 (Max-19)	
Bromodichloromethane	75-27-4	MS	19.50	0	20	97.3	79 - 126		
Bromodichloromethane	75-27-4	MSD	19.50	0	20	97.7	79 - 126	RPD 0.42 (Max-16)	
Bromoform	75-25-2	MS	19.10	0	20	95.6	70 - 123		
Bromoform	75-25-2	MSD	19.20	0	20	95.8	70 - 123	RPD 0.13 (Max-16)	
Bromomethane	74-83-9	MS	17.60	0	20	88	45 - 148		
Bromomethane	74-83-9	MSD	19.60	0	20	97.9	45 - 148	RPD 10.60 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	20.90	0	20	104	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	20.90	0	20	104	62 - 132	RPD 0.05 (Max-17)	
Chlorobenzene	108-90-7	MS	19.90	0	20	99.3	85 - 117		
Chlorobenzene	108-90-7	MSD	19.60	0	20	98.1	85 - 117	RPD 1.18 (Max-15)	
Chlorodibromomethane	124-48-1	MS	20.10	0	20	100	77 - 122		
Chlorodibromomethane	124-48-1	MSD	20.50	0	20	102	77 - 122	RPD 2.05 (Max-15)	
Chloroethane	75-00-3	MS	22	0	20	110	51 - 142		
Chloroethane	75-00-3	MSD	21.10	0	20	106	51 - 142	RPD 4.09 (Max-24)	
Chloroform	67-66-3	MS	19	0	20	94.8	78 - 122		
Chloroform	67-66-3	MSD	19.30	0	20	96.5	78 - 122	RPD 1.80 (Max-16)	
Chloromethane	74-87-3	MS	21.20	0	20	106	38 - 156		
Chloromethane	74-87-3	MSD	21.30	0	20	106	38 - 156	RPD 0.43 (Max-27)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
cis-1,2-Dichloroethene	156-59-2	MS	18.70	0	20	93.7	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	19	0	20	94.8	78 - 125	RPD 1.10 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	18.80	0	20	94	81 - 121		
cis-1,3-Dichloropropene	10061-01-5	MSD	19.10	0	20	95.6	81 - 121	RPD 1.74 (Max-16)	
Dibromomethane	74-95-3	MS	19	0	20	94.8	81 - 125		
Dibromomethane	74-95-3	MSD	19.60	0	20	98.2	81 - 125	RPD 3.54 (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	27.40	0	20	137	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	26.40	0	20	132	17 - 166	RPD 3.69 (Max-24)	
Diisopropyl ether	108-20-3	MS	17.90	0	20	89.7	74 - 131		
Diisopropyl ether	108-20-3	MSD	18.50	0	20	92.3	74 - 131	RPD 2.84 (Max-15)	
Ethylbenzene	100-41-4	MS	20.40	0	20	102	80 - 124		
Ethylbenzene	100-41-4	MSD	20.10	0	20	100	80 - 124	RPD 1.62 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	19.10	0	20	95.4	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	19.60	0	20	98.1	55 - 128	RPD 2.76 (Max-35)	
Methyl t-Butyl Ether	1634-04-4	MS	19.90	1.20	20	94	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	20.50	1.20	20	96.7	69 - 115	RPD 2.75 (Max-20)	
Methylene Chloride	75-09-2	MS	18.20	0	20	90.8	76 - 121		
Methylene Chloride	75-09-2	MSD	18.60	0	20	92.8	76 - 121	RPD 2.24 (Max-17)	
mp-Xylene	108383/106423	MS	41.20	0	40	103	79 - 125		
mp-Xylene	108383/106423	MSD	40.60	0	40	101	79 - 125	RPD 1.45 (Max-21)	
Naphthalene	91-20-3	MS	13.20	0	20	66.2	56 - 134		
Naphthalene	91-20-3	MSD	14	0	20	69.8	56 - 134	RPD 5.33 (Max-40)	
o-Chlorotoluene	95-49-8	MS	20.20	0	20	101	78 - 126		
o-Chlorotoluene	95-49-8	MSD	20.30	0	20	101	78 - 126	RPD 0.26 (Max-17)	
o-Xylene	95-47-6	MS	20.20	0	20	101	79 - 124		
o-Xylene	95-47-6	MSD	19.90	0	20	99.4	79 - 124	RPD 1.47 (Max-19)	
p-Chlorotoluene	106-43-4	MS	20	0	20	100	78 - 125		
p-Chlorotoluene	106-43-4	MSD	20	0	20	100	78 - 125	RPD 0.15 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	21.30	0	20	106	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	22.50	0	20	113	72 - 123	RPD 5.65 (Max-17)	
Styrene	100-42-5	MS	20.80	0	20	104	79 - 123		
Styrene	100-42-5	MSD	20.60	0	20	103	79 - 123	RPD 1.09 (Max-16)	
Tetrachloroethene	127-18-4	MS	19.40	0	20	97.2	72 - 124		
Tetrachloroethene	127-18-4	MSD	19.10	0	20	95.6	72 - 124	RPD 1.71 (Max-38)	
Toluene	108-88-3	MS	20	0	20	100	80 - 125		
Toluene	108-88-3	MSD	19.80	0	20	98.8	80 - 125	RPD 1.46 (Max-20)	
Total Xylenes	1330-20-7	MS	61.30	0	60	102	79 - 125		
Total Xylenes	1330-20-7	MSD	60.50	0	60	101	79 - 125	RPD 1.45 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	19	0	20	94.8	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	18.60	0	20	93	71 - 122	RPD 1.93 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	19.90	0	20	99.5	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	20.20	0	20	101	78 - 126	RPD 1.56 (Max-18)	
Trichloroethene	79-01-6	MS	19.50	0	20	97.4	77 - 124		
Trichloroethene	79-01-6	MSD	19.40	0	20	97	77 - 124	RPD 0.46 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	22.40	0	20	112	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	22.10	0	20	111	38 - 123	RPD 1.26 (Max-23)	
Vinyl Acetate	108-05-4	MS	16.50	0	20	82.7	58 - 136		
Vinyl Acetate	108-05-4	MSD	16.70	0	20	83.5	58 - 136	RPD 1.06 (Max-17)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Vinyl Chloride	75-01-4	MS	22.80	0	20	114	27 - 138		
Vinyl Chloride	75-01-4	MSD	21.90	0	20	110	27 - 138	RPD 3.87 (Max-40)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	28.80	30	96	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	28.90	30	96.3	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	30.20	30	101	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.10	30	100	79 - 114	
Dibromofluoromethane	1868-53-7	MS	28.40	30	94.6	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	28.90	30	96.4	78 - 116	
Toluene-d8	2037-26-5	MS	28.30	30	94.3	76 - 127	
Toluene-d8	2037-26-5	MSD	28.30	30	94.2	76 - 127	

Method Blank 3594420 (MB) Created on 12/01/2022 23:48 For QC Batch 915795

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	27.90	30	92.9	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	30.40	30	101	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	27.20	30	90.8	78 - 116	
Toluene-d8	2037-26-5	BLK	28.20	30	93.9	76 - 127	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Lab Control Standard 3594421 (LCS) Created on 12/01/2022 23:48 For QC Batch 915795

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	20.30		20	101	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	20.20		20	101	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	19.60		20	98.1	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	19.80		20	98.9	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	19.70		20	98.3	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	20.70		20	103	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	20.30		20	101	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	20.10		20	101	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	19.10		20	95.7	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	21		20	105	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	17.30		20	86.6	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	19.40		20	97.1	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	19.70		20	98.3	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	18.70		20	93.7	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	19.70		20	98.7	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	20.10		20	100	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	19.30		20	96.4	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	20.20		20	101	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	20.10		20	101	64 - 129		
2-Butanone	78-93-3	LCS	90.40		100	90.4	50 - 152		
2-Hexanone	591-78-6	LCS	96.80		100	96.8	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	99.40		100	99.4	71 - 146		
Acetone	67-64-1	LCS	86.60		100	86.6	40 - 151		
Benzene	71-43-2	LCS	20.20		20	101	80 - 124		
Bromobenzene	108-86-1	LCS	20.60		20	103	81 - 119		
Bromochloromethane	74-97-5	LCS	19.30		20	96.6	73 - 117		
Bromodichloromethane	75-27-4	LCS	19.60		20	98	79 - 126		
Bromoform	75-25-2	LCS	18.90		20	94.6	70 - 123		
Bromomethane	74-83-9	LCS	21.90		20	110	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	20.70		20	104	62 - 132		
Chlorobenzene	108-90-7	LCS	19.90		20	99.5	85 - 117		
Chlorodibromomethane	124-48-1	LCS	19.60		20	98.2	77 - 122		
Chloroethane	75-00-3	LCS	22.70		20	113	51 - 142		
Chloroform	67-66-3	LCS	19.70		20	98.4	78 - 122		
Chloromethane	74-87-3	LCS	21.20		20	106	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	19.80		20	99	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	19.60		20	98.1	81 - 121		
Dibromomethane	74-95-3	LCS	18.80		20	93.8	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	24.30		20	121	17 - 166		
Diisopropyl ether	108-20-3	LCS	20.20		20	101	74 - 131		
Ethylbenzene	100-41-4	LCS	20.70		20	103	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	22.80		20	114	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	19.50		20	97.3	69 - 115		
Methylene Chloride	75-09-2	LCS	19		20	94.9	76 - 121		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
mp-Xylene	108383/106423	LCS	41.60		40	104	79 - 125		
Naphthalene	91-20-3	LCS	16		20	80.2	56 - 134		
o-Chlorotoluene	95-49-8	LCS	21.50		20	107	78 - 126		
o-Xylene	95-47-6	LCS	20.40		20	102	79 - 124		
p-Chlorotoluene	106-43-4	LCS	21.40		20	107	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	22.70		20	114	72 - 123		
Styrene	100-42-5	LCS	21.90		20	110	79 - 123		
Tetrachloroethene	127-18-4	LCS	20.30		20	101	72 - 124		
Toluene	108-88-3	LCS	20.40		20	102	80 - 125		
Total Xylenes	1330-20-7	LCS	62		60	103	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	20.30		20	102	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	20.60		20	103	78 - 126		
Trichloroethene	79-01-6	LCS	20.20		20	101	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	20.60		20	103	38 - 123		
Vinyl Acetate	108-05-4	LCS	15.80		20	79.2	58 - 136		
Vinyl Chloride	75-01-4	LCS	22.10		20	111	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.10	30	93.5	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	30.30	30	101	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	27.70	30	92.3	78 - 116	
Toluene-d8	2037-26-5	LCS	28.40	30	94.7	76 - 127	

QC Batch

QC Batch	916108	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3275168020	3275168016	3275168017	3275168018
3275168019	3275168023	3275168024	3275168022
3275168021			

Matrix Spike 3594704 (MS) 3275171005 (non-Project Sample) For QC Batch 916108

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3594705 (MSD) 3275171005 (non-Project Sample) For QC Batch 916108

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	22.40	0	20	112	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	22.10	0	20	110	78 - 121	RPD 1.52 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	24.30	0	20	121	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	21.80	0	20	109	66 - 130	RPD 10.80 (Max-20)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,2,2-Tetrachloroethane	79-34-5	MS	19.80	0	20	98.9	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	20.30	0	20	102	74 - 135	RPD 2.79 (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	20.70	0	20	104	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	20.70	0	20	103	82 - 126	RPD 0.28 (Max-15)	
1,1-Dichloroethane	75-34-3	MS	21.90	0	20	109	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	20.30	0	20	102	78 - 124	RPD 7.45 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	24.40	0	20	122	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	21.40	0	20	107	63 - 128	RPD 13.10 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	22.60	0	20	113	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	21.20	0	20	106	76 - 126	RPD 6.61 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	19.50	0	20	97.4	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	20.30	0	20	102	61 - 126	RPD 4.16 (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	19.50	0	20	97.4	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	20.30	0	20	101	75 - 132	RPD 4.04 (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	19.60	0	20	98.2	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	20	0	20	99.8	67 - 123	RPD 1.63 (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	17.20	0	20	86	59 - 133		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	18.30	0	20	91.6	59 - 133	RPD 6.36 (Max-26)	
1,2-Dibromoethane	106-93-4	MS	20.90	0	20	105	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	21.20	0	20	106	80 - 124	RPD 1.19 (Max-19)	
1,2-Dichlorobenzene	95-50-1	MS	20.20	0	20	101	82 - 118		
1,2-Dichlorobenzene	95-50-1	MSD	20.10	0	20	100	82 - 118	RPD 0.42 (Max-15)	
1,2-Dichloroethane	107-06-2	MS	21.10	0	20	106	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	20.80	0	20	104	70 - 133	RPD 1.73 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	20.60	0	20	103	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	20	0	20	100	81 - 127	RPD 2.64 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	20.80	0	20	104	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	20.60	0	20	103	81 - 118	RPD 1.02 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	20.20	0	20	101	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	20.10	0	20	101	82 - 126	RPD 0.59 (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	20.70	0	20	104	81 - 116		
1,4-Dichlorobenzene	106-46-7	MSD	20.30	0	20	102	81 - 116	RPD 1.90 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	22.60	0	20	113	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	21.40	0	20	107	64 - 129	RPD 5.64 (Max-18)	
2-Butanone	78-93-3	MS	96.10	0	100	96.1	50 - 152		
2-Butanone	78-93-3	MSD	104	0	100	104	50 - 152	RPD 7.72 (Max-16)	
2-Hexanone	591-78-6	MS	98.10	0	100	98.1	65 - 154		
2-Hexanone	591-78-6	MSD	105	0	100	105	65 - 154	RPD 7.05 (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	99.20	0	100	99.2	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	105	0	100	105	71 - 146	RPD 5.87 (Max-16)	
Acetone	67-64-1	MS	86.50	0	100	86.5	40 - 151		
Acetone	67-64-1	MSD	94.50	0	100	94.5	40 - 151	RPD 8.91 (Max-40)	
Benzene	71-43-2	MS	21.40	0	20	107	80 - 124		
Benzene	71-43-2	MSD	20.70	0	20	104	80 - 124	RPD 3.46 (Max-26)	
Bromobenzene	108-86-1	MS	21.70	0	20	109	81 - 119		
Bromobenzene	108-86-1	MSD	21.20	0	20	106	81 - 119	RPD 2.34 (Max-17)	
Bromochloromethane	74-97-5	MS	22.30	0	20	112	73 - 117		
Bromochloromethane	74-97-5	MSD	22	0	20	110	73 - 117	RPD 1.52 (Max-19)	
Bromodichloromethane	75-27-4	MS	21.60	0	20	108	79 - 126		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Bromodichloromethane	75-27-4	MSD	21.10	0	20	106	79 - 126	RPD 2.21 (Max-16)	
Bromoform	75-25-2	MS	20	0	20	100	70 - 123		
Bromoform	75-25-2	MSD	20.40	0	20	102	70 - 123	RPD 1.76 (Max-16)	
Bromomethane	74-83-9	MS	19.70	0	20	98.3	45 - 148		
Bromomethane	74-83-9	MSD	19.90	0	20	99.7	45 - 148	RPD 1.39 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	24	0	20	120	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	22.40	0	20	112	62 - 132	RPD 6.87 (Max-17)	
Chlorobenzene	108-90-7	MS	21.60	0	20	108	85 - 117		
Chlorobenzene	108-90-7	MSD	20.60	0	20	103	85 - 117	RPD 4.89 (Max-15)	
Chlorodibromomethane	124-48-1	MS	22	0	20	110	77 - 122		
Chlorodibromomethane	124-48-1	MSD	21.60	0	20	108	77 - 122	RPD 1.83 (Max-15)	
Chloroethane	75-00-3	MS	23.90	0	20	120	51 - 142		
Chloroethane	75-00-3	MSD	21.80	0	20	109	51 - 142	RPD 9.36 (Max-24)	
Chloroform	67-66-3	MS	21.10	0	20	106	78 - 122		
Chloroform	67-66-3	MSD	20.50	0	20	103	78 - 122	RPD 3.01 (Max-16)	
Chloromethane	74-87-3	MS	23.40	0	20	117	38 - 156		
Chloromethane	74-87-3	MSD	22.40	0	20	112	38 - 156	RPD 4.30 (Max-27)	
cis-1,2-Dichloroethene	156-59-2	MS	21.60	0.33	20	106	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	20.80	0.33	20	102	78 - 125	RPD 3.64 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	20.40	0	20	102	81 - 121		
cis-1,3-Dichloropropene	10061-01-5	MSD	19.80	0	20	98.8	81 - 121	RPD 2.96 (Max-16)	
Dibromomethane	74-95-3	MS	21	0	20	105	81 - 125		
Dibromomethane	74-95-3	MSD	20.80	0	20	104	81 - 125	RPD 0.86 (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	29.20	0	20	146	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	27.50	0	20	138	17 - 166	RPD 5.96 (Max-24)	
Diisopropyl ether	108-20-3	MS	20.10	0	20	100	74 - 131		
Diisopropyl ether	108-20-3	MSD	19.60	0	20	98.2	74 - 131	RPD 2.07 (Max-15)	
Ethylbenzene	100-41-4	MS	21.90	0	20	109	80 - 124		
Ethylbenzene	100-41-4	MSD	21.20	0	20	106	80 - 124	RPD 3 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	20.50	0	20	102	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	20.50	0	20	102	55 - 128	RPD 0.15 (Max-35)	
Methyl t-Butyl Ether	1634-04-4	MS	21.50	0	20	107	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	21.40	0	20	107	69 - 115	RPD 0.15 (Max-20)	
Methylene Chloride	75-09-2	MS	20.70	0	20	103	76 - 121		
Methylene Chloride	75-09-2	MSD	20.20	0	20	101	76 - 121	RPD 2.41 (Max-17)	
mp-Xylene	108383/106423	MS	44.90	0	40	112	79 - 125		
mp-Xylene	108383/106423	MSD	42.70	0	40	107	79 - 125	RPD 5.01 (Max-21)	
Naphthalene	91-20-3	MS	14.60	0	20	73.1	56 - 134		
Naphthalene	91-20-3	MSD	15.50	0	20	77.4	56 - 134	RPD 5.72 (Max-40)	
o-Chlorotoluene	95-49-8	MS	21.60	0	20	108	78 - 126		
o-Chlorotoluene	95-49-8	MSD	21	0	20	105	78 - 126	RPD 2.58 (Max-17)	
o-Xylene	95-47-6	MS	21.60	0	20	108	79 - 124		
o-Xylene	95-47-6	MSD	21	0	20	105	79 - 124	RPD 2.57 (Max-19)	
p-Chlorotoluene	106-43-4	MS	21.10	0	20	106	78 - 125		
p-Chlorotoluene	106-43-4	MSD	21	0	20	105	78 - 125	RPD 0.70 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	22.90	0	20	115	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	23.20	0	20	116	72 - 123	RPD 0.97 (Max-17)	
Styrene	100-42-5	MS	22.10	0	20	110	79 - 123		
Styrene	100-42-5	MSD	21.60	0	20	108	79 - 123	RPD 2.04 (Max-16)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Tetrachloroethene	127-18-4	MS	20.90	0	20	104	72 - 124		
Tetrachloroethene	127-18-4	MSD	20.20	0	20	101	72 - 124	RPD 3.32 (Max-38)	
Toluene	108-88-3	MS	21.60	0	20	108	80 - 125		
Toluene	108-88-3	MSD	20.60	0	20	103	80 - 125	RPD 5.10 (Max-20)	
Total Xylenes	1330-20-7	MS	66.50	0	60	111	79 - 125		
Total Xylenes	1330-20-7	MSD	63.80	0	60	106	79 - 125	RPD 4.21 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	21.30	0	20	107	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	20.30	0	20	102	71 - 122	RPD 4.78 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	21.70	0	20	108	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	20.90	0	20	105	78 - 126	RPD 3.51 (Max-18)	
Trichloroethene	79-01-6	MS	24.90	2.60	20	112	77 - 124		
Trichloroethene	79-01-6	MSD	23.20	2.60	20	103	77 - 124	RPD 6.99 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	25	0	20	125*	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	23.20	0	20	116	38 - 123	RPD 7.74 (Max-23)	
Vinyl Acetate	108-05-4	MS	17.80	0	20	88.8	58 - 136		
Vinyl Acetate	108-05-4	MSD	18.20	0	20	91.2	58 - 136	RPD 2.63 (Max-17)	
Vinyl Chloride	75-01-4	MS	24.50	0	20	122	27 - 138		
Vinyl Chloride	75-01-4	MSD	23	0	20	115	27 - 138	RPD 5.94 (Max-40)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	29.70	30	98.9	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	29.70	30	99	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	30	30	100	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.40	30	101	79 - 114	
Dibromofluoromethane	1868-53-7	MS	29.10	30	96.9	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	29.50	30	98.2	78 - 116	
Toluene-d8	2037-26-5	MS	27.90	30	92.9	76 - 127	
Toluene-d8	2037-26-5	MSD	28	30	93.3	76 - 127	

Method Blank 3594612 (MB) Created on 12/02/2022 10:36 For QC Batch 916108

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	28.40	30	94.7	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	31.10	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.30	30	94.3	78 - 116	
Toluene-d8	2037-26-5	BLK	28.50	30	95.1	76 - 127	

Lab Control Standard 3594613 (LCS) Created on 12/02/2022 10:36 For QC Batch 916108

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	21.80		20	109	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	20.40		20	102	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.70		20	103	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	20.90		20	104	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	19.70		20	98.4	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	20.10		20	100	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	20.40		20	102	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	23.70		20	119	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	20.40		20	102	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	22.50		20	113	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	20.20		20	101	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	21.10		20	105	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	20.90		20	104	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	19.50		20	97.6	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	19.70		20	98.6	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	21		20	105	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	20.20		20	101	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	20.90		20	105	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	18.40		20	92	64 - 129		
2-Butanone	78-93-3	LCS	104		100	104	50 - 152		
2-Hexanone	591-78-6	LCS	112		100	112	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	110		100	110	71 - 146		
Acetone	67-64-1	LCS	102		100	102	40 - 151		
Benzene	71-43-2	LCS	20		20	100	80 - 124		
Bromobenzene	108-86-1	LCS	21.30		20	107	81 - 119		
Bromochloromethane	74-97-5	LCS	21		20	105	73 - 117		
Bromodichloromethane	75-27-4	LCS	20.30		20	101	79 - 126		
Bromoform	75-25-2	LCS	20.50		20	102	70 - 123		
Bromomethane	74-83-9	LCS	21.10		20	105	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	21		20	105	62 - 132		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Chlorobenzene	108-90-7	LCS	20.50		20	102	85 - 117		
Chlorodibromomethane	124-48-1	LCS	21.60		20	108	77 - 122		
Chloroethane	75-00-3	LCS	21.60		20	108	51 - 142		
Chloroform	67-66-3	LCS	20.50		20	103	78 - 122		
Chloromethane	74-87-3	LCS	21.10		20	105	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	20		20	99.9	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	20.10		20	101	81 - 121		
Dibromomethane	74-95-3	LCS	20.10		20	101	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	24.40		20	122	17 - 166		
Diisopropyl ether	108-20-3	LCS	19.90		20	99.4	74 - 131		
Ethylbenzene	100-41-4	LCS	21		20	105	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	24.30		20	121	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	20.60		20	103	69 - 115		
Methylene Chloride	75-09-2	LCS	19.30		20	96.7	76 - 121		
mp-Xylene	108383/106423	LCS	42.60		40	107	79 - 125		
Naphthalene	91-20-3	LCS	18.70		20	93.4	56 - 134		
o-Chlorotoluene	95-49-8	LCS	21.50		20	108	78 - 126		
o-Xylene	95-47-6	LCS	20.80		20	104	79 - 124		
p-Chlorotoluene	106-43-4	LCS	21.40		20	107	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	22.80		20	114	72 - 123		
Styrene	100-42-5	LCS	22.10		20	110	79 - 123		
Tetrachloroethene	127-18-4	LCS	22.40		20	112	72 - 124		
Toluene	108-88-3	LCS	20.80		20	104	80 - 125		
Total Xylenes	1330-20-7	LCS	63.50		60	106	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	19.90		20	99.6	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	21.20		20	106	78 - 126		
Trichloroethene	79-01-6	LCS	20.20		20	101	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	21.60		20	108	38 - 123		
Vinyl Acetate	108-05-4	LCS	18		20	89.9	58 - 136		
Vinyl Chloride	75-01-4	LCS	21.70		20	109	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	29.20	30	97.4	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	31	30	103	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	29.10	30	97	78 - 116	
Toluene-d8	2037-26-5	LCS	28.90	30	96.3	76 - 127	

QC Batch

QC Batch	917178	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3275168019 3275168021

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Method Blank 3595366 (MB) Created on 12/05/2022 11:28 For QC Batch 917178

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	24.40	30	81.4	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	29.60	30	98.5	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	25.90	30	86.4	78 - 116	
Toluene-d8	2037-26-5	BLK	26.60	30	88.6	76 - 127	

Lab Control Standard 3595367 (LCS) Created on 12/05/2022 11:28 For QC Batch 917178

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	16.70		20	83.5	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	18.20		20	91.1	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	18.20		20	90.8	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	16.70		20	83.3	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	18.80		20	93.9	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	20.10		20	100	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	18.80		20	93.9	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	14.20		20	71	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	18.60		20	92.8	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	14.60		20	72.9	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	15.40		20	76.8	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	16		20	80	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	17.20		20	86.2	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	18.80		20	93.9	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	17.70		20	88.3	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	17.10		20	85.5	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	16.70		20	83.4	82 - 126		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dichlorobenzene	106-46-7	LCS	17.60		20	88	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	17.90		20	89.7	64 - 129		
2-Butanone	78-93-3	LCS	59.40		100	59.4	50 - 152		
2-Hexanone	591-78-6	LCS	76.40		100	76.4	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	86.10		100	86.1	71 - 146		
Acetone	67-64-1	LCS	78.50		100	78.5	40 - 151		
Benzene	71-43-2	LCS	20		20	100	80 - 124		
Bromobenzene	108-86-1	LCS	18		20	90.2	81 - 119		
Bromochloromethane	74-97-5	LCS	19.20		20	95.9	73 - 117		
Bromodichloromethane	75-27-4	LCS	17.20		20	86	79 - 126		
Bromoform	75-25-2	LCS	16.60		20	83.2	70 - 123		
Bromomethane	74-83-9	LCS	20.70		20	103	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	20.70		20	104	62 - 132		
Chlorobenzene	108-90-7	LCS	18		20	89.9	85 - 117		
Chlorodibromomethane	124-48-1	LCS	15.50		20	77.7	77 - 122		
Chloroethane	75-00-3	LCS	19.20		20	96	51 - 142		
Chloroform	67-66-3	LCS	18.50		20	92.6	78 - 122		
Chloromethane	74-87-3	LCS	19.70		20	98.3	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	18.20		20	91.2	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	16.50		20	82.5	81 - 121		
Dibromomethane	74-95-3	LCS	17.20		20	86.2	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	19		20	95.2	17 - 166		
Diisopropyl ether	108-20-3	LCS	18.80		20	93.9	74 - 131		
Ethylbenzene	100-41-4	LCS	17.70		20	88.3	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	15.90		20	79.6	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	18.20		20	91	69 - 115		
Methylene Chloride	75-09-2	LCS	19		20	95.2	76 - 121		
mp-Xylene	108383/106423	LCS	36.90		40	92.3	79 - 125		
Naphthalene	91-20-3	LCS	13.30		20	66.4	56 - 134		
o-Chlorotoluene	95-49-8	LCS	18.50		20	92.7	78 - 126		
o-Xylene	95-47-6	LCS	16.90		20	84.5	79 - 124		
p-Chlorotoluene	106-43-4	LCS	18.20		20	91	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	17		20	84.8	72 - 123		
Styrene	100-42-5	LCS	17.80		20	88.9	79 - 123		
Tetrachloroethene	127-18-4	LCS	17.90		20	89.3	72 - 124		
Toluene	108-88-3	LCS	17.90		20	89.6	80 - 125		
Total Xylenes	1330-20-7	LCS	53.80		60	89.7	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	18.90		20	94.4	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	15.80		20	78.8	78 - 126		
Trichloroethene	79-01-6	LCS	19.20		20	96.1	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	18.40		20	92.1	38 - 123		
Vinyl Acetate	108-05-4	LCS	12.20		20	61.2	58 - 136		
Vinyl Chloride	75-01-4	LCS	20.20		20	101	27 - 138		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	25.30	30	84.2	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	29.70	30	99	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	26.40	30	88	78 - 116	
Toluene-d8	2037-26-5	LCS	25.60	30	85.4	76 - 127	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3275168001	MW-03	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915266
3275168002	MW-27D	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915266
3275168003	MW-43	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915266
3275168004	MW-39	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915266
3275168005	MW-42	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915266
3275168006	MW-18	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915795
3275168007	MW-38R	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915795
3275168008	MW-40D	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915795
3275168009	MW-05R	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915795
3275168010	MW-44	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915795
3275168011	MW-21D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	915795
3275168012	MW-41D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	915795
3275168013	MW-09	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	915795
3275168014	MW-23D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914227
		N/A	N/A	N/A		SW846 8260D	915795
3275168015	MW-46D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914227
		N/A	N/A	N/A		SW846 8260D	915795
3275168016	MW-01	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	916108
3275168017	MW-01D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	916108
3275168018	MW-22D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	916108
3275168019	MW-20	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	915208
		N/A	N/A	N/A		SW846 8260D	916108
		N/A	N/A	N/A		SW846 8260D	917178
3275168020	MW-4R	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914227
		N/A	N/A	N/A		SW846 8260D	916108
3275168021	MW-16	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	915208
		N/A	N/A	N/A		SW846 8260D	917178
		N/A	N/A	N/A		SW846 8260D	916108
3275168022	Trip Blank-A	N/A	N/A	N/A		SW846 8260D	916108
3275168023	Trip Blank-B	N/A	N/A	N/A		SW846 8260D	916108
3275168024	Trip Blank-E	N/A	N/A	N/A		SW846 8260D	916108

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Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 1 of 3
ALS Quote #:

3275168
Logged By: CXW
PM: SJB

Client Name: WSP

Address:
13530 Dulles Technology Dr
Suite 300
Herndon VA 20171

Contact: Eric Johnson
Phone#: (703) 709-6500
Project Name/#: 31405608.010
Bill To:
Purchase Order #:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X]-Y eric.johnson@wsp.com

Receipt Information (completed by Receiving Lab)
Temp Taken By: MJE Therm ID: TH570 WO Temp (°C) 3°C
Receipt Info completed by:

Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	VOCs	1,4-Dioxane
Container Type						CG	AG
Container Size						40mL	250mL
Preservative						HCl	None
1 MW-03	11/20/22	1000		G	GW	2	2
2 MW-27D	11/20/22	1015		G	GW	2	2
3 MW-43	11/20/22	1030		G	GW	2	2
4 MW-39	11/20/22	1140		G	GW	2	2
5 MW-42	11/20/22	1155		G	GW	2	1
6 MW-18	11/20/22	1215		G	GW	2	2
7 MW-38R	11/20/22	1220		G	GW	2	2
8 MW-40D	11/20/22	1255		G	GW	2	2
9 MW-05R	11/20/22	1240		G	GW	2	2
10 MW-44	11/20/22	1410		G	GW	2	2

Unless otherwise Indicated, preservation indicates field filtration on applicable me

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Sample or Field Results

Temp Taken By: MJE
WO Temp (°C) 3
Therm ID: 570
Receipt Info Completed By: DPB
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:

SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

WV Containers 0-6°C Y N NA
Deviations? NO YES
If YES, list below:
Client contact:
Date/Tech:
Rad Screen (uCi)
New Source? Y N
New Source Contact:
PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks
No Collector
DPB
11/22/22

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Circle Sample Collector: ALS Tech / Client ID:
Comments:

Date:	Time		Relinquished By / Company Name		Received By / Company Name
11-21-22	1330	1	[signature]	2 1330	ALS Evan P
11-21-22	1740	3	ALS Evan P.	4	[signature]
		5		6	
		7		8	
		9		10	

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ] _____

EDD: [ ] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] other _____

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 2 of 3 | of
ALS Quote #:

Client Name: WSP

Address:
13530 Dulles Technology Dr
Suite 300
Herndon VA 20171

Contact: Eric Johnsen
Phone#: (703) 709-6500
Project Name/#: 31405608.010
Bill To:
Purchase Order #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X]-Y Eric.Johnsen@wsp.com

	Container Type	Container Size	Preservative
	GG	40	HCl
	AG	250	NoZ

Unless otherwise Indicated, preservation indicates field filtration on applicable methods

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	VOCs	1,4 Dioxane	Enter Number o
1	MW-21D	11/20/22	1430		G		2	2	
2	MW-41D	11/20/22	1445		G		2	2	
3	MW-09	11/20/22	1520		G		2	2	
4	MW-23D	11/20/22	1530		G		2	2	
5	MW-46D	11/20/22	1600		G		2	2	
6	MW-01	11/20/22	1610		G		2	2	
7	MW-01D	11/20/22	1620		G		2	2	
8	MW-22D	11/20/22	1630		G		2	2	
9	MW-20	11/20/22	1645		G		2	2	
10	MW-4R	11/20/22	1655		G		2	2	

Temp Taken By: MJE
WO Temp (°C): 5.0
Therm ID: 510
Receipt Info Completed By: DPB
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
Voa Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

Circle Sample Collector: ALS Tech / Client ID:

Comments:

Date:	Time		Relinquished By / Company Name		Received By / Company Name
11-21-22	1330	1	Elliott	2	1330 ALS Evan P
11-21-22	1740	3	ALS Evan P	4	
		5		6	
		7		8	
		9		10	

Receipt Information (completed by Receiving Lab)
Temp Taken By: Therm ID: WO Temp (°C)
Receipt Info completed by: WV Containers 0-6°C Y N NA
Cooler Custody Seals Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Coolers & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA only: Headspace Present Y N NA
VOA only: Trip Blank Y N NA
NJ ≤ 4 days? Y N
Courier/Tracking #:
Deviations? NO YES
If YES, list below:
Client contact:
Date/Tech:

Sample(s) for Radiation testing? Y N
Reportable SDWA Sample(s)? Y N
SDWA State of Origin?
PWSID #
Rad Screen (uCi)
New Source? Y N
New Source Contact:
PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks
No Collector
DPB
11/22/22

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables: [ ] Standard Lvl 1 [ ] CLP-like [ ] HSCA; [ ] Standard Lvl 2 [ ] DOD [ ] Landfill; [ ] Standard Lvl 3 [ ] NJ RED [ ] NJ GW; [ ] Standard Lvl 4 [ ] NJ Full [ ] ____

EDD: [ ] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: [ ] Lab [ ] Special

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] other ____

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

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Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3 of 3
ALS Quote #:
of

Client Name: WSP

Address:
13530 Dulles Technology Dr
Suite 300
Herndon VA 20171

Contact: Eric Johnson
Phone#: (703) 709 6500
Project Name/#: 31401545.010
Bill To:
Purchase Order #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X]-Y eric.johnson@wsp.com

	Container Type									
	Container Size	40	250							
	Preservative	HCl	None							

Unless otherwise Indicated, preservation in

ANALYSES/METH

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	VOCs	1,4 - Dioxane								
					Enter Number of Conta											
1	MW-16	11/20/22	1705		G	GW	2	2								
2	Trip Blank-A	11/20/22	—		—	—	2	—								
3	Trip Blank-B	11/20/22	—		—	—	2	—								
4	Trip Blank-E	11/20/22	—		—	—	2	—								
5																
6																
7																
8																
9																
10																

Temp Taken By: IR/JF
WO Temp (°C)
Therm ID: 510
Receipt Info Completed By: DPB
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

Receipt Information (completed by Receiving Lab)

Temp Taken By: Therm ID: WO Temp (°C)
Receipt Info completed by: WV Containers 0-6°C Y N NA

Cooler Custody Seals Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	Y	N	NA
Coolers & Samples Intact	Y	N	
Correct Containers Provided	Y	N	
Sample Label/COC Agree	Y	N	
Adequate Sample Volumes	Y	N	
VOA only: Headspace Present	Y	N	NA
VOA only: Trip Blank	Y	N	NA

Deviations? NO YES
If YES, list below:

NJ ≤ 4 days? Y N
Courier/Tracking #:
Client contact:
Date/Tech:

Sample(s) for Radiation testing? Y N
Rad Screen (uCi)
Reportable SDWA Sample(s)? Y N
New Source? Y N
SDWA State of Origin?
New Source Contact:
PWSID #
PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks
No Collector
DPB 11/22/22

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Circle Sample Collector: ALS Tech / Client ID:

Comments:

Date:	Time		Relinquished By / Company Name		Received By / Company Name
11-21-22	1330	1		2 1330	ALS Evon P
11-21-22	1740	3	ALS Evon P	4	
		5		6	
		7		8	
		9		10	

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ] _____

EDD: [ ] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: [ ] Lab [ ] Special

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] other

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **WSP USA Inc.**

Project 31405608.010
Workorder 3275167
Report ID 211246 on 12/6/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 21, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Elliott Martynkiewicz - WSP USA Inc.
Eric Johnson - WSP USA INC

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3275167001	RW-1S	Ground Water	11/20/2022 12:30	11/21/2022 17:40	CBC	Collected By Client
3275167002	RW-3S	Ground Water	11/20/2022 12:50	11/21/2022 17:40	CBC	Collected By Client
3275167003	RW-1D	Ground Water	11/20/2022 14:20	11/21/2022 17:40	CBC	Collected By Client
3275167004	RW-2D	Ground Water	11/20/2022 15:00	11/21/2022 17:40	CBC	Collected By Client
3275167005	RW-2S	Ground Water	11/20/2022 15:05	11/21/2022 17:40	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 169 and the control limits were 45 to 148.
2	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 153 and the control limits were 55 to 128.

Detected Results Summary

Client Sample ID	RW-1S	Collected	11/20/2022 12:30
Lab Sample ID	3275167001	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	158	ug/L	5.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	49.0	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	150	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	523	ug/L	10.0	SW846 8260D	#
1,2-Dichloroethane	2.3	ug/L	1.0	SW846 8260D	#
Chloroethane	20.4	ug/L	1.0	SW846 8260D	#
cis-1,2-Dichloroethene	2.9	ug/L	1.0	SW846 8260D	#
Trichloroethene	3.7	ug/L	1.0	SW846 8260D	#
Vinyl Chloride	5.0	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	RW-3S	Collected	11/20/2022 12:50
Lab Sample ID	3275167002	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	5.4	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	4.6	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	2.1	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	2.2	ug/L	1.0	SW846 8260D	#
Acetone	10.3	ug/L	10.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	RW-1D	Collected	11/20/2022 14:20
Lab Sample ID	3275167003	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	40.2	ug/L	0.40	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	8.1	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	68.6	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	237	ug/L	10.0	SW846 8260D	#
1,2-Dichloroethane	1.9	ug/L	1.0	SW846 8260D	#
Chloroethane	8.2	ug/L	1.0	SW846 8260D	#
cis-1,2-Dichloroethene	2.8	ug/L	1.0	SW846 8260D	#
Trichloroethene	1.0	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	RW-2D	Collected	11/20/2022 15:00
Lab Sample ID	3275167004	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	40.0	ug/L	0.10	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	4.2	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	20.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	123	ug/L	1.0	SW846 8260D	#
1,2-Dichloroethane	1.2	ug/L	1.0	SW846 8260D	#

Detected Results Summary

Client Sample ID	RW-2S	Collected	11/20/2022 15:05
Lab Sample ID	3275167005	Lab Receipt	11/21/2022 17:40

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	172	ug/L	2.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	238	ug/L	10.0	SW846 8260D	#
1,1-Dichloroethane	71.2	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	393	ug/L	10.0	SW846 8260D	#
Chloroethane	1.7	ug/L	1.0	SW846 8260D	#
Methylene Chloride	2.3	ug/L	1.0	SW846 8260D	#
Trichloroethene	4.4	ug/L	1.0	SW846 8260D	#

Results

Client Sample ID	RW-1S	Collected	11/20/2022 12:30
Lab Sample ID	3275167001	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	158		ug/L	5.0	SW846 8270E SIM	50	12/01/2022 12:40	S7M	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	71.1%	29 – 112	11/24/2022 07:09	
2-Methylnapthalene-d10	7297-45-2	0*%	29 – 112	12/01/2022 12:40	
Fluoranthene-d10	93951-69-0	92.7%	45 – 130	11/24/2022 07:09	
Fluoranthene-d10	93951-69-0	0*%	45 – 130	12/01/2022 12:40	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,1,1-Trichloroethane	49.0		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,1-Dichloroethane	150		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,1-Dichloroethene	523		ug/L	10.0	SW846 8260D	10	12/05/2022 00:51	PDK	B
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2-Dichloroethane	2.3		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Bromomethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Chloroethane	20.4		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A

Results

Client Sample ID	RW-1S	Collected	11/20/2022 12:30
Lab Sample ID	3275167001	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
cis-1,2-Dichloroethene	2.9		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Hexachlorobutadiene	5.0 U	U,2	ug/L	5.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Trichloroethene	3.7		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 16:35	TMP	A
Vinyl Chloride	5.0		ug/L	1.0	SW846 8260D	1	12/01/2022 16:35	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.4%	62 – 133	12/01/2022 16:35	
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	12/05/2022 00:51	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	12/01/2022 16:35	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	12/05/2022 00:51	
Dibromofluoromethane	1868-53-7	98.1%	78 – 116	12/01/2022 16:35	
Dibromofluoromethane	1868-53-7	102%	78 – 116	12/05/2022 00:51	
Toluene-d8	2037-26-5	101%	76 – 127	12/01/2022 16:35	
Toluene-d8	2037-26-5	95.7%	76 – 127	12/05/2022 00:51	

Results

Client Sample ID	RW-3S	Collected	11/20/2022 12:50
Lab Sample ID	3275167002	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	5.4		ug/L	0.10	SW846 8270E SIM	1	11/24/2022 07:35	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	80.9%	29 – 112	11/24/2022 07:35	
Fluoranthene-d10	93951-69-0	102%	45 – 130	11/24/2022 07:35	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,1,1-Trichloroethane	4.6		ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,1-Dichloroethane	2.1		ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,1-Dichloroethene	2.2		ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Acetone	10.3		ug/L	10.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Bromomethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A

Results

Client Sample ID	RW-3S	Collected	11/20/2022 12:50
Lab Sample ID	3275167002	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Hexachlorobutadiene	5.0 U	U,2	ug/L	5.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 16:58	TMP	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 16:58	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	91.9%	62 – 133	12/01/2022 16:58	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	12/01/2022 16:58	
Dibromofluoromethane	1868-53-7	95.4%	78 – 116	12/01/2022 16:58	
Toluene-d8	2037-26-5	101%	76 – 127	12/01/2022 16:58	

Results

Client Sample ID	RW-1D	Collected	11/20/2022 14:20
Lab Sample ID	3275167003	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	40.2		ug/L	0.40	SW846 8270E SIM	4	11/30/2022 02:45	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	76.6%	29 – 112	11/24/2022 08:02	
2-Methylnapthalene-d10	7297-45-2	83.7%	29 – 112	11/30/2022 02:45	
Fluoranthene-d10	93951-69-0	97.7%	45 – 130	11/24/2022 08:02	
Fluoranthene-d10	93951-69-0	96.5%	45 – 130	11/30/2022 02:45	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,1,1-Trichloroethane	8.1		ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,1-Dichloroethane	68.6		ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,1-Dichloroethene	237		ug/L	10.0	SW846 8260D	10	12/05/2022 01:37	PDK	B
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2-Dichloroethane	1.9		ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Bromomethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Chloroethane	8.2		ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A

Results

Client Sample ID	RW-1D	Collected	11/20/2022 14:20
Lab Sample ID	3275167003	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
cis-1,2-Dichloroethene	2.8		ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Hexachlorobutadiene	5.0 U	U,2	ug/L	5.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Trichloroethene	1.0		ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 17:20	TMP	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:20	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.1%	62 – 133	12/01/2022 17:20	
1,2-Dichloroethane-d4	17060-07-0	97.9%	62 – 133	12/05/2022 01:37	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	12/01/2022 17:20	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	12/05/2022 01:37	
Dibromofluoromethane	1868-53-7	98.2%	78 – 116	12/01/2022 17:20	
Dibromofluoromethane	1868-53-7	101%	78 – 116	12/05/2022 01:37	
Toluene-d8	2037-26-5	100%	76 – 127	12/01/2022 17:20	
Toluene-d8	2037-26-5	95%	76 – 127	12/05/2022 01:37	

Results

Client Sample ID	RW-2D	Collected	11/20/2022 15:00
Lab Sample ID	3275167004	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	40.0		ug/L	0.10	SW846 8270E SIM	1	11/29/2022 00:02	M1O	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	79%	29 – 112	11/29/2022 00:02	
Fluoranthene-d10	93951-69-0	104%	45 – 130	11/29/2022 00:02	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,1,1-Trichloroethane	4.2		ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,1-Dichloroethane	20.4		ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,1-Dichloroethene	123		ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2-Dichloroethane	1.2		ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Bromomethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Chloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A

Results

Client Sample ID	RW-2D	Collected	11/20/2022 15:00
Lab Sample ID	3275167004	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Hexachlorobutadiene	5.0 U	U,2	ug/L	5.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 17:43	TMP	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 17:43	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.3%	62 – 133	12/01/2022 17:43	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	12/01/2022 17:43	
Dibromofluoromethane	1868-53-7	98.4%	78 – 116	12/01/2022 17:43	
Toluene-d8	2037-26-5	102%	76 – 127	12/01/2022 17:43	

Results

Client Sample ID	RW-2S	Collected	11/20/2022 15:05
Lab Sample ID	3275167005	Lab Receipt	11/21/2022 17:40

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	172		ug/L	2.0	SW846 8270E SIM	20	12/01/2022 10:53	S7M	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	0*%	29 – 112	12/01/2022 10:53	
2-Methylnapthalene-d10	7297-45-2	75.6%	29 – 112	11/29/2022 00:29	
Fluoranthene-d10	93951-69-0	0*%	45 – 130	12/01/2022 10:53	
Fluoranthene-d10	93951-69-0	106%	45 – 130	11/29/2022 00:29	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,1,1-Trichloroethane	238		ug/L	10.0	SW846 8260D	10	12/05/2022 01:14	PDK	B
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,1-Dichloroethane	71.2		ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,1-Dichloroethene	393		ug/L	10.0	SW846 8260D	10	12/05/2022 01:14	PDK	B
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Bromomethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Chloroethane	1.7		ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A

Results

Client Sample ID	RW-2S	Collected	11/20/2022 15:05
Lab Sample ID	3275167005	Lab Receipt	11/21/2022 17:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Hexachlorobutadiene	5.0 U	U,2	ug/L	5.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Methylene Chloride	2.3		ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Trichloroethene	4.4		ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	12/01/2022 18:06	TMP	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	12/01/2022 18:06	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.3%	62 – 133	12/01/2022 18:06	
1,2-Dichloroethane-d4	17060-07-0	96.9%	62 – 133	12/05/2022 01:14	
4-Bromofluorobenzene	460-00-4	112%	79 – 114	12/01/2022 18:06	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	12/05/2022 01:14	
Dibromofluoromethane	1868-53-7	98.7%	78 – 116	12/01/2022 18:06	
Dibromofluoromethane	1868-53-7	101%	78 – 116	12/05/2022 01:14	
Toluene-d8	2037-26-5	101%	76 – 127	12/01/2022 18:06	
Toluene-d8	2037-26-5	94.1%	76 – 127	12/05/2022 01:14	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3275167001	RW-1S	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3275167002	RW-3S	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275167003	RW-1D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	
3275167004	RW-2D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
3275167005	RW-2S	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	
		SW846 8260D	N/A	

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM

QC Batch

QC Batch	912104	Prep Method	SW846 3510C
Date	11/23/2022 13:25	Analysis Method	SW846 8270E SIM
Tech.	LDC		

Associated Samples

3275167001 3275167002 3275167003

Duplicate

3590700 (DUP) 3274995002 (non-Project Sample) For QC Batch 912104

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)				Qualifiers
1,4-Dioxane	123-91-1	DUP	0	0	RPD	0	(Max-30)	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	DUP	0.68	1	68.3	29 - 112	
Fluoranthene-d10	93951-69-0	DUP	0.90	1	90.1	45 - 130	

Matrix Spike

3590701 (MS) 3275168010 (non-Project Sample) For QC Batch 912104

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	MS	5.40	4.20	1.30	97.6*	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	MS	1	1.30	78.5	29 - 112	
Fluoranthene-d10	93951-69-0	MS	1.20	1.30	90.3	45 - 130	

Method Blank

3590698 (MB) Created on 11/22/2022 14:43 For QC Batch 912104

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	0.10 U	ug/L	0.10	U

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.69	1	68.9	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	0.94	1	93.6	45 - 130	

Lab Control Standard 3590699 (LCS) Created on 11/22/2022 14:43 For QC Batch 912104

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.45		1	45.2	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.70	1	70	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.98	1	98.5	45 - 130	

QC Batch

QC Batch	912308	Prep Method	SW846 3510C
Date	11/25/2022 06:25	Analysis Method	SW846 8270E SIM
Tech.	MXL		

Associated Samples

3275167004 3275167005

Matrix Spike 3591159 (MS) 3275168012 (non-Project Sample) For QC Batch 912308

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	MS	1.30	1.10	1	14.2*	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	MS	0.79	1	78.8	29 - 112	
Fluoranthene-d10	93951-69-0	MS	0.97	1	97.3	45 - 130	

Duplicate 3591160 (DUP) 3275168014 (non-Project Sample) For QC Batch 912308

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)			Qualifiers
1,4-Dioxane	123-91-1	DUP	62.8599	59.6334	RPD	5.27 (Max-30)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	DUP	0.72	1	71.7	29 - 112	
2-Methylnapthalene-d10	7297-45-2	DUP	0	1	0*	29 - 112	
Fluoranthene-d10	93951-69-0	DUP	0.87	1	86.8	45 - 130	
Fluoranthene-d10	93951-69-0	DUP	0	1	0*	45 - 130	

Method Blank 3591157 (MB) Created on 11/23/2022 08:33 For QC Batch 912308

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	0.10 U	ug/L	0.10	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.75	1	75.4	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	1.10	1	108	45 - 130	

Lab Control Standard 3591158 (LCS) Created on 11/23/2022 08:33 For QC Batch 912308

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.55		1	55.3	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.78	1	78.2	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.99	1	99	45 - 130	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS

QC Batch

QC Batch	915266	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3275167001 3275167002 3275167004 3275167003 3275167005

Matrix Spike 3594359 (MS) 3275168002 (non-Project Sample) For QC Batch 915266

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3594360 (MSD) 3275168002 (non-Project Sample) For QC Batch 915266

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	19.70	0	20	98.6	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	22.30	0	20	112	78 - 121	RPD 12.50 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	21.50	0	20	107	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	23.70	0	20	119	66 - 130	RPD 9.96 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	16.50	0	20	82.3	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.50	0	20	108	74 - 135	RPD 26.80* (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	17.80	0	20	89.2	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	21.30	0	20	106	82 - 126	RPD 17.60* (Max-15)	
1,1-Dichloroethane	75-34-3	MS	20.80	0	20	104	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	22.80	0	20	114	78 - 124	RPD 9.09 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	22.20	0	20	111	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	24	0	20	120	63 - 128	RPD 7.75 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	22.30	0	20	112	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	24.40	0	20	122	76 - 126	RPD 8.71 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	9.60	0	20	48.2*	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	19.20	0	20	95.8	61 - 126	RPD 66.20* (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	16.50	0	20	82.5	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	21.90	0	20	110	75 - 132	RPD 28.20* (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	13.50	0	20	67.4	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	19.60	0	20	97.9	67 - 123	RPD 36.90* (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	12.20	0	20	61.2	59 - 133		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	18.80	0	20	94.2	59 - 133	RPD 42.40* (Max-26)	
1,2-Dibromoethane	106-93-4	MS	17.40	0	20	87.2	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	21.30	0	20	106	80 - 124	RPD 19.70* (Max-19)	
1,2-Dichlorobenzene	95-50-1	MS	17.90	0	20	89.7	82 - 118		
1,2-Dichlorobenzene	95-50-1	MSD	21.30	0	20	106	82 - 118	RPD 17.10* (Max-15)	
1,2-Dichloroethane	107-06-2	MS	18.80	0	20	94.2	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	21.90	0	20	109	70 - 133	RPD 15 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	20.10	0	20	100	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	22.90	0	20	114	81 - 127	RPD 13.10 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	19.50	0	20	97.3	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	22.70	0	20	113	81 - 118	RPD 15.20 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	17.50	0	20	87.4	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	20.70	0	20	103	82 - 126	RPD 16.70* (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	19.90	0	20	99.7	81 - 116		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dichlorobenzene	106-46-7	MSD	22.90	0	20	114	81 - 116	RPD 13.60 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	22.70	0	20	114	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	24.60	0	20	123	64 - 129	RPD 7.92 (Max-18)	
2-Butanone	78-93-3	MS	50.30	0	100	50.3	50 - 152		
2-Butanone	78-93-3	MSD	85.80	0	100	85.8	50 - 152	RPD 52.20* (Max-16)	
2-Hexanone	591-78-6	MS	63.20	0	100	63.2*	65 - 154		
2-Hexanone	591-78-6	MSD	101	0	100	101	65 - 154	RPD 46.30* (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	75.80	0	100	75.8	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	113	0	100	113	71 - 146	RPD 39.30* (Max-16)	
Acetone	67-64-1	MS	54.50	0	100	54.5	40 - 151		
Acetone	67-64-1	MSD	97.30	0	100	97.3	40 - 151	RPD 56.40* (Max-40)	
Benzene	71-43-2	MS	21.20	0	20	106	80 - 124		
Benzene	71-43-2	MSD	23.20	0	20	116	80 - 124	RPD 9.20 (Max-26)	
Bromobenzene	108-86-1	MS	20.70	0	20	103	81 - 119		
Bromobenzene	108-86-1	MSD	23.10	0	20	116	81 - 119	RPD 11.20 (Max-17)	
Bromochloromethane	74-97-5	MS	20.60	0	20	103	73 - 117		
Bromochloromethane	74-97-5	MSD	23.40	0	20	117	73 - 117	RPD 12.40 (Max-19)	
Bromodichloromethane	75-27-4	MS	19.70	0	20	98.6	79 - 126		
Bromodichloromethane	75-27-4	MSD	22.80	0	20	114	79 - 126	RPD 14.60 (Max-16)	
Bromoform	75-25-2	MS	17.10	0	20	85.7	70 - 123		
Bromoform	75-25-2	MSD	21.20	0	20	106	70 - 123	RPD 21.20* (Max-16)	
Bromomethane	74-83-9	MS	47.20	0.62	20	233*	45 - 148		
Bromomethane	74-83-9	MSD	40.10	0.62	20	197*	45 - 148	RPD 16.20 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	22.30	0	20	112	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	27.90	0	20	140*	62 - 132	RPD 22.20* (Max-17)	
Chlorobenzene	108-90-7	MS	19.70	0	20	98.4	85 - 117		
Chlorobenzene	108-90-7	MSD	22.10	0	20	110	85 - 117	RPD 11.50 (Max-15)	
Chlorodibromomethane	124-48-1	MS	18	0	20	90.2	77 - 122		
Chlorodibromomethane	124-48-1	MSD	21.40	0	20	107	77 - 122	RPD 17.10* (Max-15)	
Chloroethane	75-00-3	MS	21.50	0	20	107	51 - 142		
Chloroethane	75-00-3	MSD	22	0	20	110	51 - 142	RPD 2.64 (Max-24)	
Chloroform	67-66-3	MS	19.70	0	20	98.7	78 - 122		
Chloroform	67-66-3	MSD	22.10	0	20	111	78 - 122	RPD 11.40 (Max-16)	
Chloromethane	74-87-3	MS	21.10	0	20	105	38 - 156		
Chloromethane	74-87-3	MSD	22.10	0	20	110	38 - 156	RPD 4.62 (Max-27)	
cis-1,2-Dichloroethene	156-59-2	MS	21.20	0	20	106	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	23.20	0	20	116	78 - 125	RPD 9.20 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	18.60	0	20	93.1	81 - 121		
cis-1,3-Dichloropropene	10061-01-5	MSD	21.20	0	20	106	81 - 121	RPD 13.10 (Max-16)	
Dibromomethane	74-95-3	MS	18.40	0	20	91.9	81 - 125		
Dibromomethane	74-95-3	MSD	21.80	0	20	109	81 - 125	RPD 17.10* (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	24.90	0	20	124	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	26.40	0	20	132	17 - 166	RPD 6 (Max-24)	
Diisopropyl ether	108-20-3	MS	19.60	0	20	98.2	74 - 131		
Diisopropyl ether	108-20-3	MSD	22.70	0	20	114	74 - 131	RPD 14.70 (Max-15)	
Ethylbenzene	100-41-4	MS	20.90	0	20	105	80 - 124		
Ethylbenzene	100-41-4	MSD	23.40	0	20	117	80 - 124	RPD 11 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	28.50	0	20	142*	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	30.60	0	20	153*	55 - 128	RPD 7.09 (Max-35)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Methyl t-Butyl Ether	1634-04-4	MS	17.90	0.43	20	87.3	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	22.60	0.43	20	111	69 - 115	RPD 23.20* (Max-20)	
Methylene Chloride	75-09-2	MS	19.90	0	20	99.5	76 - 121		
Methylene Chloride	75-09-2	MSD	22.20	0	20	111	76 - 121	RPD 11 (Max-17)	
mp-Xylene	108383/106423	MS	42.60	0	40	106	79 - 125		
mp-Xylene	108383/106423	MSD	48	0	40	120	79 - 125	RPD 12 (Max-21)	
Naphthalene	91-20-3	MS	8.40	0	20	41.9*	56 - 134		
Naphthalene	91-20-3	MSD	17.50	0	20	87.6	56 - 134	RPD 70.50* (Max-40)	
o-Chlorotoluene	95-49-8	MS	21.50	0	20	108	78 - 126		
o-Chlorotoluene	95-49-8	MSD	24	0	20	120	78 - 126	RPD 11.10 (Max-17)	
o-Xylene	95-47-6	MS	19.70	0	20	98.4	79 - 124		
o-Xylene	95-47-6	MSD	22.30	0	20	111	79 - 124	RPD 12.50 (Max-19)	
p-Chlorotoluene	106-43-4	MS	21.70	0	20	109	78 - 125		
p-Chlorotoluene	106-43-4	MSD	24.50	0	20	122	78 - 125	RPD 12 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	21.80	0	20	109	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	25	0	20	125*	72 - 123	RPD 14 (Max-17)	
Styrene	100-42-5	MS	21.90	0	20	110	79 - 123		
Styrene	100-42-5	MSD	24.40	0	20	122	79 - 123	RPD 10.60 (Max-16)	
Tetrachloroethene	127-18-4	MS	19.50	0	20	97.4	72 - 124		
Tetrachloroethene	127-18-4	MSD	21.30	0	20	107	72 - 124	RPD 9.17 (Max-38)	
Toluene	108-88-3	MS	21.10	0	20	105	80 - 125		
Toluene	108-88-3	MSD	23	0	20	115	80 - 125	RPD 8.92 (Max-20)	
Total Xylenes	1330-20-7	MS	62.20	0	60	104	79 - 125		
Total Xylenes	1330-20-7	MSD	70.30	0	60	117	79 - 125	RPD 12.20 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	21.50	0	20	108	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	23.10	0	20	115	71 - 122	RPD 7.01 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	18	0	20	90.1	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	21.90	0	20	109	78 - 126	RPD 19.20* (Max-18)	
Trichloroethene	79-01-6	MS	20	0	20	100	77 - 124		
Trichloroethene	79-01-6	MSD	22.50	0	20	112	77 - 124	RPD 11.50 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	21.80	0	20	109	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	23.70	0	20	118	38 - 123	RPD 8.16 (Max-23)	
Vinyl Acetate	108-05-4	MS	16.50	0	20	82.4	58 - 136		
Vinyl Acetate	108-05-4	MSD	20.50	0	20	103	58 - 136	RPD 21.90* (Max-17)	
Vinyl Chloride	75-01-4	MS	23.30	0	20	117	27 - 138		
Vinyl Chloride	75-01-4	MSD	24	0	20	120	27 - 138	RPD 2.72 (Max-40)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	27.30	30	91	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	28.20	30	93.8	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	32.40	30	108	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	31.10	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	MS	29.20	30	97.3	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	29	30	96.8	78 - 116	
Toluene-d8	2037-26-5	MS	29.30	30	97.7	76 - 127	
Toluene-d8	2037-26-5	MSD	28.80	30	96.1	76 - 127	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Method Blank 3594113 (MB) Created on 12/01/2022 10:53 For QC Batch 915266

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	27.90	30	93	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	31.40	30	105	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	29	30	96.6	78 - 116	
Toluene-d8	2037-26-5	BLK	29.90	30	99.6	76 - 127	

Lab Control Standard 3594114 (LCS) Created on 12/01/2022 10:53 For QC Batch 915266

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	21.10		20	105	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	21.30		20	106	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.50		20	103	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	20.80		20	104	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	21		20	105	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	21.50		20	108	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	21.60		20	108	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	20.20		20	101	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	20.80		20	104	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.60		20	103	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	17.30		20	86.3	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	20.60		20	103	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	20.80		20	104	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	20.60		20	103	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	21.20		20	106	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	21.70		20	108	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	20		20	99.9	82 - 126		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dichlorobenzene	106-46-7	LCS	22		20	110	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	21.60		20	108	64 - 129		
2-Butanone	78-93-3	LCS	75.90		100	75.9	50 - 152		
2-Hexanone	591-78-6	LCS	93		100	93	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	109		100	109	71 - 146		
Acetone	67-64-1	LCS	90.30		100	90.3	40 - 151		
Benzene	71-43-2	LCS	21.50		20	108	80 - 124		
Bromobenzene	108-86-1	LCS	22.10		20	110	81 - 119		
Bromochloromethane	74-97-5	LCS	22		20	110	73 - 117		
Bromodichloromethane	75-27-4	LCS	21.20		20	106	79 - 126		
Bromoform	75-25-2	LCS	20.70		20	104	70 - 123		
Bromomethane	74-83-9	LCS	33.80		20	169*	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	24.70		20	124	62 - 132		
Chlorobenzene	108-90-7	LCS	20.80		20	104	85 - 117		
Chlorodibromomethane	124-48-1	LCS	20.70		20	104	77 - 122		
Chloroethane	75-00-3	LCS	21.30		20	106	51 - 142		
Chloroform	67-66-3	LCS	20.30		20	102	78 - 122		
Chloromethane	74-87-3	LCS	21.70		20	108	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	21.50		20	108	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	20.30		20	101	81 - 121		
Dibromomethane	74-95-3	LCS	20.50		20	102	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	24.80		20	124	17 - 166		
Diisopropyl ether	108-20-3	LCS	21.70		20	108	74 - 131		
Ethylbenzene	100-41-4	LCS	21.50		20	107	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	30.50		20	153*	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	21.20		20	106	69 - 115		
Methylene Chloride	75-09-2	LCS	20.70		20	104	76 - 121		
mp-Xylene	108383/106423	LCS	44.20		40	111	79 - 125		
Naphthalene	91-20-3	LCS	19.10		20	95.3	56 - 134		
o-Chlorotoluene	95-49-8	LCS	22.50		20	113	78 - 126		
o-Xylene	95-47-6	LCS	21		20	105	79 - 124		
p-Chlorotoluene	106-43-4	LCS	22.80		20	114	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	23.70		20	118	72 - 123		
Styrene	100-42-5	LCS	22.10		20	110	79 - 123		
Tetrachloroethene	127-18-4	LCS	20.10		20	100	72 - 124		
Toluene	108-88-3	LCS	21.40		20	107	80 - 125		
Total Xylenes	1330-20-7	LCS	65.30		60	109	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	20.90		20	105	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	21.10		20	106	78 - 126		
Trichloroethene	79-01-6	LCS	20.30		20	102	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	22.40		20	112	38 - 123		
Vinyl Acetate	108-05-4	LCS	20.20		20	101	58 - 136		
Vinyl Chloride	75-01-4	LCS	22.70		20	114	27 - 138		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	27.90	30	92.9	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	31.30	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	28.50	30	94.9	78 - 116	
Toluene-d8	2037-26-5	LCS	29.20	30	97.5	76 - 127	

QC Batch

QC Batch	916914	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3275167001 3275167003 3275167005

Matrix Spike 3595075 (MS) 3276423001 (non-Project Sample) For QC Batch 916914

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3595076 (MSD) 3276423001 (non-Project Sample) For QC Batch 916914

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	MS	22.80	0	20	114	78 - 121		
1,1,1,2-Tetrachloroethane	630-20-6	MSD	22	0	20	110	78 - 121	RPD 3.57 (Max-16)	
1,1,1-Trichloroethane	71-55-6	MS	23.60	0	20	118	66 - 130		
1,1,1-Trichloroethane	71-55-6	MSD	22.50	0	20	113	66 - 130	RPD 4.74 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	18.30	0	20	91.7	74 - 135		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	18.20	0	20	90.8	74 - 135	RPD 1.05 (Max-16)	
1,1,2-Trichloroethane	79-00-5	MS	20.50	0	20	102	82 - 126		
1,1,2-Trichloroethane	79-00-5	MSD	20.40	0	20	102	82 - 126	RPD 0.48 (Max-15)	
1,1-Dichloroethane	75-34-3	MS	20.90	0	20	104	78 - 124		
1,1-Dichloroethane	75-34-3	MSD	19.80	0	20	99.1	78 - 124	RPD 5.17 (Max-15)	
1,1-Dichloroethene	75-35-4	MS	21	0	20	105	63 - 128		
1,1-Dichloroethene	75-35-4	MSD	18.90	0	20	94.3	63 - 128	RPD 10.70 (Max-21)	
1,1-Dichloropropene	563-58-6	MS	22.70	0	20	113	76 - 126		
1,1-Dichloropropene	563-58-6	MSD	21.30	0	20	107	76 - 126	RPD 5.97 (Max-16)	
1,2,3-Trichlorobenzene	87-61-6	MS	18.70	0	20	93.3	61 - 126		
1,2,3-Trichlorobenzene	87-61-6	MSD	19.60	0	20	98.2	61 - 126	RPD 5.21 (Max-36)	
1,2,3-Trichloropropane	96-18-4	MS	19.40	0	20	96.8	75 - 132		
1,2,3-Trichloropropane	96-18-4	MSD	18.70	0	20	93.7	75 - 132	RPD 3.31 (Max-19)	
1,2,4-Trichlorobenzene	120-82-1	MS	18.90	0	20	94.3	67 - 123		
1,2,4-Trichlorobenzene	120-82-1	MSD	18.60	0	20	93	67 - 123	RPD 1.44 (Max-22)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	15.60	0	20	78	59 - 133		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	16.20	0	20	80.9	59 - 133	RPD 3.58 (Max-26)	
1,2-Dibromoethane	106-93-4	MS	20.60	0	20	103	80 - 124		
1,2-Dibromoethane	106-93-4	MSD	21.10	0	20	105	80 - 124	RPD 2.37 (Max-19)	
1,2-Dichlorobenzene	95-50-1	MS	19.70	0	20	98.3	82 - 118		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dichlorobenzene	95-50-1	MSD	19.40	0	20	96.8	82 - 118	RPD 1.62 (Max-15)	
1,2-Dichloroethane	107-06-2	MS	21.30	0	20	107	70 - 133		
1,2-Dichloroethane	107-06-2	MSD	21.10	0	20	106	70 - 133	RPD 0.96 (Max-19)	
1,2-Dichloropropane	78-87-5	MS	20	0	20	99.8	81 - 127		
1,2-Dichloropropane	78-87-5	MSD	19.60	0	20	98.1	81 - 127	RPD 1.68 (Max-15)	
1,3-Dichlorobenzene	541-73-1	MS	20.10	0	20	100	81 - 118		
1,3-Dichlorobenzene	541-73-1	MSD	19.80	0	20	99.1	81 - 118	RPD 1.34 (Max-16)	
1,3-Dichloropropane	142-28-9	MS	19.50	0	20	97.6	82 - 126		
1,3-Dichloropropane	142-28-9	MSD	19.60	0	20	98.2	82 - 126	RPD 0.60 (Max-15)	
1,4-Dichlorobenzene	106-46-7	MS	20.20	0	20	101	81 - 116		
1,4-Dichlorobenzene	106-46-7	MSD	19.40	0	20	97.1	81 - 116	RPD 3.92 (Max-15)	
2,2-Dichloropropane	594-20-7	MS	23.30	0	20	116	64 - 129		
2,2-Dichloropropane	594-20-7	MSD	21.70	0	20	108	64 - 129	RPD 7.27 (Max-18)	
2-Butanone	78-93-3	MS	95.40	0	100	95.4	50 - 152		
2-Butanone	78-93-3	MSD	96.10	0	100	96.1	50 - 152	RPD 0.78 (Max-16)	
2-Hexanone	591-78-6	MS	87.70	0	100	87.7	65 - 154		
2-Hexanone	591-78-6	MSD	86	0	100	86	65 - 154	RPD 2.02 (Max-17)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	89.60	0	100	89.6	71 - 146		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	91.90	0	100	91.9	71 - 146	RPD 2.57 (Max-16)	
Acetone	67-64-1	MS	83.80	0	100	83.8	40 - 151		
Acetone	67-64-1	MSD	78.40	0	100	78.4	40 - 151	RPD 6.58 (Max-40)	
Benzene	71-43-2	MS	21.80	0	20	109	80 - 124		
Benzene	71-43-2	MSD	20.80	0	20	104	80 - 124	RPD 4.45 (Max-26)	
Bromobenzene	108-86-1	MS	21.60	0	20	108	81 - 119		
Bromobenzene	108-86-1	MSD	20.70	0	20	103	81 - 119	RPD 4.72 (Max-17)	
Bromochloromethane	74-97-5	MS	23.50	0	20	118*	73 - 117		
Bromochloromethane	74-97-5	MSD	23.10	0	20	115	73 - 117	RPD 2.06 (Max-19)	
Bromodichloromethane	75-27-4	MS	22	0	20	110	79 - 126		
Bromodichloromethane	75-27-4	MSD	21.80	0	20	109	79 - 126	RPD 0.65 (Max-16)	
Bromoform	75-25-2	MS	19.30	0	20	96.5	70 - 123		
Bromoform	75-25-2	MSD	19.80	0	20	99.1	70 - 123	RPD 2.59 (Max-16)	
Bromomethane	74-83-9	MS	19.80	0	20	99	45 - 148		
Bromomethane	74-83-9	MSD	20.50	0	20	102	45 - 148	RPD 3.42 (Max-26)	
Carbon Tetrachloride	56-23-5	MS	24.70	0	20	124	62 - 132		
Carbon Tetrachloride	56-23-5	MSD	23	0	20	115	62 - 132	RPD 7.15 (Max-17)	
Chlorobenzene	108-90-7	MS	21.50	0	20	107	85 - 117		
Chlorobenzene	108-90-7	MSD	20.30	0	20	102	85 - 117	RPD 5.43 (Max-15)	
Chlorodibromomethane	124-48-1	MS	22.10	0	20	110	77 - 122		
Chlorodibromomethane	124-48-1	MSD	21.80	0	20	109	77 - 122	RPD 1.23 (Max-15)	
Chloroethane	75-00-3	MS	21.40	0	20	107	51 - 142		
Chloroethane	75-00-3	MSD	19.90	0	20	99.7	51 - 142	RPD 6.98 (Max-24)	
Chloroform	67-66-3	MS	21.90	0	20	109	78 - 122		
Chloroform	67-66-3	MSD	21.10	0	20	106	78 - 122	RPD 3.64 (Max-16)	
Chloromethane	74-87-3	MS	20	0	20	100	38 - 156		
Chloromethane	74-87-3	MSD	19	0	20	95.2	38 - 156	RPD 5.16 (Max-27)	
cis-1,2-Dichloroethene	156-59-2	MS	21.20	0	20	106	78 - 125		
cis-1,2-Dichloroethene	156-59-2	MSD	20.40	0	20	102	78 - 125	RPD 3.74 (Max-21)	
cis-1,3-Dichloropropene	10061-01-5	MS	19.70	0	20	98.4	81 - 121		
cis-1,3-Dichloropropene	10061-01-5	MSD	19.10	0	20	95.6	81 - 121	RPD 2.84 (Max-16)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Dibromomethane	74-95-3	MS	21.70	0	20	109	81 - 125		
Dibromomethane	74-95-3	MSD	21.30	0	20	106	81 - 125	RPD 1.95 (Max-16)	
Dichlorodifluoromethane	75-71-8	MS	28.20	0	20	141	17 - 166		
Dichlorodifluoromethane	75-71-8	MSD	26.20	0	20	131	17 - 166	RPD 7.28 (Max-24)	
Diisopropyl ether	108-20-3	MS	19.20	0	20	95.8	74 - 131		
Diisopropyl ether	108-20-3	MSD	18.50	0	20	92.5	74 - 131	RPD 3.48 (Max-15)	
Ethylbenzene	100-41-4	MS	22.10	0	20	110	80 - 124		
Ethylbenzene	100-41-4	MSD	20.70	0	20	104	80 - 124	RPD 6.26 (Max-19)	
Hexachlorobutadiene	87-68-3	MS	21	0	20	105	55 - 128		
Hexachlorobutadiene	87-68-3	MSD	20	0	20	100	55 - 128	RPD 4.74 (Max-35)	
Methyl t-Butyl Ether	1634-04-4	MS	21.20	0	20	106	69 - 115		
Methyl t-Butyl Ether	1634-04-4	MSD	20.70	0	20	104	69 - 115	RPD 2.35 (Max-20)	
Methylene Chloride	75-09-2	MS	21	0	20	105	76 - 121		
Methylene Chloride	75-09-2	MSD	19.50	0	20	97.3	76 - 121	RPD 7.88 (Max-17)	
mp-Xylene	108383/106423	MS	44.70	0	40	112	79 - 125		
mp-Xylene	108383/106423	MSD	42.10	0	40	105	79 - 125	RPD 5.96 (Max-21)	
Naphthalene	91-20-3	MS	12.90	0	20	64.7	56 - 134		
Naphthalene	91-20-3	MSD	13.30	0	20	66.5	56 - 134	RPD 2.77 (Max-40)	
o-Chlorotoluene	95-49-8	MS	20.60	0	20	103	78 - 126		
o-Chlorotoluene	95-49-8	MSD	19.80	0	20	99.2	78 - 126	RPD 3.66 (Max-17)	
o-Xylene	95-47-6	MS	20.70	0	20	103	79 - 124		
o-Xylene	95-47-6	MSD	20.90	0	20	105	79 - 124	RPD 1.32 (Max-19)	
p-Chlorotoluene	106-43-4	MS	20.40	0	20	102	78 - 125		
p-Chlorotoluene	106-43-4	MSD	19.30	0	20	96.6	78 - 125	RPD 5.52 (Max-16)	
p-Isopropyltoluene	99-87-6	MS	22.40	0	20	112	72 - 123		
p-Isopropyltoluene	99-87-6	MSD	22.30	0	20	111	72 - 123	RPD 0.68 (Max-17)	
Styrene	100-42-5	MS	20	0	20	99.8	79 - 123		
Styrene	100-42-5	MSD	20.20	0	20	101	79 - 123	RPD 1.02 (Max-16)	
Tetrachloroethene	127-18-4	MS	22	0	20	110	72 - 124		
Tetrachloroethene	127-18-4	MSD	20.90	0	20	105	72 - 124	RPD 4.85 (Max-38)	
Toluene	108-88-3	MS	21.10	0	20	106	80 - 125		
Toluene	108-88-3	MSD	20.50	0	20	103	80 - 125	RPD 2.85 (Max-20)	
Total Xylenes	1330-20-7	MS	65.30	0	60	109	79 - 125		
Total Xylenes	1330-20-7	MSD	63	0	60	105	79 - 125	RPD 3.60 (Max-35)	
trans-1,2-Dichloroethene	156-60-5	MS	21.50	0	20	107	71 - 122		
trans-1,2-Dichloroethene	156-60-5	MSD	19.20	0	20	96	71 - 122	RPD 11.20 (Max-22)	
trans-1,3-Dichloropropene	10061-02-6	MS	20.70	0	20	103	78 - 126		
trans-1,3-Dichloropropene	10061-02-6	MSD	20.80	0	20	104	78 - 126	RPD 0.44 (Max-18)	
Trichloroethene	79-01-6	MS	22.70	0.72	20	110	77 - 124		
Trichloroethene	79-01-6	MSD	21.60	0.72	20	104	77 - 124	RPD 5.37 (Max-18)	
Trichlorofluoromethane	75-69-4	MS	24.70	0	20	123	38 - 123		
Trichlorofluoromethane	75-69-4	MSD	22.90	0	20	115	38 - 123	RPD 7.46 (Max-23)	
Vinyl Acetate	108-05-4	MS	17.40	0	20	87.2	58 - 136		
Vinyl Acetate	108-05-4	MSD	18.50	0	20	92.5	58 - 136	RPD 5.91 (Max-17)	
Vinyl Chloride	75-01-4	MS	21.20	0	20	106	27 - 138		
Vinyl Chloride	75-01-4	MSD	19.60	0	20	98	27 - 138	RPD 8.01 (Max-40)	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	30.30	30	101	62 - 133	
1,2-Dichloroethane-d4	17060-07-0	MSD	31.30	30	104	62 - 133	
4-Bromofluorobenzene	460-00-4	MS	30.10	30	100	79 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.80	30	103	79 - 114	
Dibromofluoromethane	1868-53-7	MS	30.90	30	103	78 - 116	
Dibromofluoromethane	1868-53-7	MSD	31.90	30	106	78 - 116	
Toluene-d8	2037-26-5	MS	28	30	93.4	76 - 127	
Toluene-d8	2037-26-5	MSD	29.10	30	97	76 - 127	

Method Blank 3595069 (MB) Created on 12/04/2022 22:58 For QC Batch 916914

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.40	30	98.1	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	30.50	30	102	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	30.50	30	102	78 - 116	
Toluene-d8	2037-26-5	BLK	28.70	30	95.5	76 - 127	

Lab Control Standard 3595070 (LCS) Created on 12/04/2022 22:58 For QC Batch 916914

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	22.60		20	113	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	22.70		20	114	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	18.40		20	92.1	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	20.10		20	101	82 - 126		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1-Dichloroethane	75-34-3	LCS	20.20		20	101	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	21.30		20	107	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	22		20	110	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	20.30		20	101	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	18.20		20	90.8	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	21.40		20	107	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	16.40		20	81.8	59 - 133		
1,2-Dibromoethane	106-93-4	LCS	20.50		20	102	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	20.40		20	102	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	20.40		20	102	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	19.70		20	98.7	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	21.20		20	106	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	19.60		20	98.2	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	21		20	105	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	25.60		20	128	64 - 129		
2-Butanone	78-93-3	LCS	92.20		100	92.2	50 - 152		
2-Hexanone	591-78-6	LCS	85.80		100	85.8	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	88.10		100	88.1	71 - 146		
Acetone	67-64-1	LCS	89.50		100	89.5	40 - 151		
Benzene	71-43-2	LCS	20.90		20	105	80 - 124		
Bromobenzene	108-86-1	LCS	21.50		20	108	81 - 119		
Bromochloromethane	74-97-5	LCS	22.30		20	112	73 - 117		
Bromodichloromethane	75-27-4	LCS	21.80		20	109	79 - 126		
Bromoform	75-25-2	LCS	20.80		20	104	70 - 123		
Bromomethane	74-83-9	LCS	24.30		20	122	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	23.10		20	116	62 - 132		
Chlorobenzene	108-90-7	LCS	21.20		20	106	85 - 117		
Chlorodibromomethane	124-48-1	LCS	22.20		20	111	77 - 122		
Chloroethane	75-00-3	LCS	23.40		20	117	51 - 142		
Chloroform	67-66-3	LCS	21.70		20	108	78 - 122		
Chloromethane	74-87-3	LCS	21.40		20	107	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	20.80		20	104	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	20.60		20	103	81 - 121		
Dibromomethane	74-95-3	LCS	20.70		20	103	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	25.90		20	130	17 - 166		
Diisopropyl ether	108-20-3	LCS	19.50		20	97.4	74 - 131		
Ethylbenzene	100-41-4	LCS	21.50		20	107	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	24.80		20	124	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	20.80		20	104	69 - 115		
Methylene Chloride	75-09-2	LCS	20.10		20	101	76 - 121		
mp-Xylene	108383/106423	LCS	44.20		40	111	79 - 125		
Naphthalene	91-20-3	LCS	14.60		20	73.2	56 - 134		
o-Chlorotoluene	95-49-8	LCS	21		20	105	78 - 126		
o-Xylene	95-47-6	LCS	21.40		20	107	79 - 124		
p-Chlorotoluene	106-43-4	LCS	21.10		20	105	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	23.50		20	117	72 - 123		
Styrene	100-42-5	LCS	21.70		20	109	79 - 123		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Tetrachloroethene	127-18-4	LCS	21.40		20	107	72 - 124		
Toluene	108-88-3	LCS	21.10		20	106	80 - 125		
Total Xylenes	1330-20-7	LCS	65.60		60	109	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	20.70		20	104	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	21.70		20	109	78 - 126		
Trichloroethene	79-01-6	LCS	21.50		20	107	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	24.60		20	123	38 - 123		
Vinyl Acetate	108-05-4	LCS	18.90		20	94.5	58 - 136		
Vinyl Chloride	75-01-4	LCS	23		20	115	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.40	30	94.6	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	30.70	30	102	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.60	30	102	78 - 116	
Toluene-d8	2037-26-5	LCS	28.60	30	95.4	76 - 127	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3275167001	RW-1S	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	915208
		N/A	N/A	N/A		SW846 8260D	915266
		N/A	N/A	N/A		SW846 8260D	916914
3275167002	RW-3S	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		N/A	N/A	N/A		SW846 8260D	915266
3275167003	RW-1D	SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	912698
		SW846 3510C	912104	11/23/2022 13:25	LDC	SW846 8270E SIM	914227
		N/A	N/A	N/A		SW846 8260D	916914
		N/A	N/A	N/A		SW846 8260D	915266
3275167004	RW-2D	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	915266
3275167005	RW-2S	SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	915208
		SW846 3510C	912308	11/25/2022 06:25	MXL	SW846 8270E SIM	914158
		N/A	N/A	N/A		SW846 8260D	916914
		N/A	N/A	N/A		SW846 8260D	915266

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 1 of 1
ALS Quote #:

3275167
Logged By: CXW
PM: SJB

Client Name: WSP

Address:
13530 Dulles Technology Dr
Suite 300
Herndon VA 20171

Contact: Eric Johnson
Phone#: (703) 709-6500
Project Name/#: 3140154-5608.010
Bill To:
Purchase Order #:

TAT: [ ] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X]-Y eric.johnson@wsp.com

	Container Type	AG	AG							
	Container Size	40	250							
	Preservative	HCl	None							

Unless otherwise Indicated, preservation indicates field filtration on applicable methods

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	VOCs	1,4 - Dioxane							
							Enter Number of Containers Per Sample or Field Results Below.								
1	RW-1S	11/20/22	1230		G	GW	2	2							
2	RW-3S	11/20/22	1250		G	GW	2	2							
3	RW-1D	11/20/22	1420		G	GW	2	2							
4	RW-2D	11/20/22	1500		G	GW	2	2							
5	RW-2S	11/20/22	1505		G	GW	2	2							
6	~~Trip Blank-E~~														
7															
8															
9															
10															

Circle Sample Collector: ALS Tech / Client ID:

Comments:

Receipt Info:
Temp Taken By: MJE Therm ID: TH570 WO Temp (°C) 3°C
Receipt Info completed by: _____ WV Containers 0-6°C Y N NA
Cooler Custody Seals Intact Y N NA
Deviations? NO YES
If YES, list below:

Temp Taken By: MJE
WO Temp (°C) 3.0
Therm ID: 570
Receipt Info Completed By: DPB
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N NA
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

Client contact:
Date/Tech:

Rad Screen (uCi)_____
New Source? Y N
New Source Contact:

e #:_____

ion E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks
No Collection
11/22/22

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Date:	Time		Relinquished By / Company Name		Received By / Company Name
11/21/22	1530	1		2 1330	ALS Evan P
11-21-22	1740	3	ALS Evan P.	4	
		5		6	
		7		8	
		9		10	

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ] _____

EDD: [ ] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] other _____

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **WSP USA Inc.**

Project Former KOP-Flex Onsite
Workorder 3280981
Report ID 217333 on 1/6/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Dec 30, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Elliott Martynkiewicz - WSP USA Inc.
Eric Johnson - WSP USA INC

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3280981001	MW-16D	Ground Water	12/29/2022 08:40	12/30/2022 09:21		WSP USA Inc.

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Chloroethane. The % Recovery was reported as 150 and the control limits were 51 to 142.
2	The QC sample type LCS for method SW846 8260D was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 146 and the control limits were 38 to 123.

Detected Results Summary

Client Sample ID	MW-16D	Collected	12/29/2022 08:40
Lab Sample ID	3280981001	Lab Receipt	12/30/2022 09:21

Compound	Result	Units	RDL	Method	Flag
SEMIVOLATILE SIM					
1,4-Dioxane	29.9	ug/L	1.0	SW846 8270E SIM	#
VOLATILE ORGANICS					
1,1,1-Trichloroethane	4.7	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethane	16.4	ug/L	1.0	SW846 8260D	#
1,1-Dichloroethene	80.1	ug/L	1.0	SW846 8260D	#
Methyl t-Butyl Ether	1.2	ug/L	1.0	SW846 8260D	#

Results

Client Sample ID	MW-16D	Collected	12/29/2022 08:40
Lab Sample ID	3280981001	Lab Receipt	12/30/2022 09:21

SEMIVOLATILE SIM

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,4-Dioxane	29.9		ug/L	1.0	SW846 8270E SIM	10	01/05/2023 14:42	S7M	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
2-Methylnapthalene-d10	7297-45-2	57.3%	29 – 112	01/05/2023 13:20	
2-Methylnapthalene-d10	7297-45-2	52%	29 – 112	01/05/2023 14:42	
Fluoranthene-d10	93951-69-0	68.6%	45 – 130	01/05/2023 13:20	
Fluoranthene-d10	93951-69-0	67.4%	45 – 130	01/05/2023 14:42	

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,1,1-Trichloroethane	4.7		ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,1-Dichloroethane	16.4		ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,1-Dichloroethene	80.1		ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,1-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2,3-Trichloropropane	2.0 U	U	ug/L	2.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,3-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
2,2-Dichloropropane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
2-Butanone	10.0 U	U	ug/L	10.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
2-Hexanone	5.0 U	U	ug/L	5.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Acetone	10.0 U	U	ug/L	10.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Benzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Bromobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Bromochloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Bromoform	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Bromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Chlorobenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Chloroethane	1.0 U	U,1	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A

Results

Client Sample ID	MW-16D	Collected	12/29/2022 08:40
Lab Sample ID	3280981001	Lab Receipt	12/30/2022 09:21

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Chloromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Dibromomethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Diisopropyl ether	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Ethylbenzene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Hexachlorobutadiene	5.0 U	U	ug/L	5.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Methyl t-Butyl Ether	1.2		ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Methylene Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
mp-Xylene	2.0 U	U	ug/L	2.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Naphthalene	2.0 U	U	ug/L	2.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
o-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
o-Xylene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
p-Chlorotoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
p-Isopropyltoluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Styrene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Toluene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Total Xylenes	3.0 U	U	ug/L	3.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Trichloroethene	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Trichlorofluoromethane	1.0 U	U,2	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Vinyl Acetate	5.0 U	U	ug/L	5.0	SW846 8260D	1	01/04/2023 11:02	TMP	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	SW846 8260D	1	01/04/2023 11:02	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.1%	62 – 133	01/04/2023 11:02	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	01/04/2023 11:02	
Dibromofluoromethane	1868-53-7	89.9%	78 – 116	01/04/2023 11:02	
Toluene-d8	2037-26-5	99.9%	76 – 127	01/04/2023 11:02	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3280981001	MW-16D	SW846 8270E SIM	SW846 3510C	
		SW846 8260D	N/A	

QUALITY CONTROL SAMPLES

SEMIVOLATILE SIM

QC Batch

QC Batch	931909	Prep Method	SW846 3510C
Date	01/04/2023 15:10	Analysis Method	SW846 8270E SIM
Tech.	AJW		

Associated Samples

3280981001

Method Blank 3607174 (MB) Created on 01/04/2023 10:51 For QC Batch 931909

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,4-Dioxane	123-91-1	BLK	0.10 U	ug/L	0.10	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	BLK	0.60	1	60.2	29 - 112	
Fluoranthene-d10	93951-69-0	BLK	0.74	1	74	45 - 130	

Lab Control Standard 3607175 (LCS) Created on 01/04/2023 10:51 For QC Batch 931909

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,4-Dioxane	123-91-1	LCS	0.59		1	58.9	22 - 75		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
2-Methylnapthalene-d10	7297-45-2	LCS	0.51	1	51.1	29 - 112	
Fluoranthene-d10	93951-69-0	LCS	0.78	1	77.8	45 - 130	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS

QC Batch

QC Batch	931887	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260D
Tech.			

Associated Samples

3280981001

Method Blank 3607099 (MB) Created on 01/04/2023 09:34 For QC Batch 931887

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	BLK	1.0 U	ug/L	1.0	U
1,1,1-Trichloroethane	71-55-6	BLK	1.0 U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	1.0 U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	1.0 U	ug/L	1.0	U
1,1-Dichloropropene	563-58-6	BLK	1.0 U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	2.0 U	ug/L	2.0	U
1,2,3-Trichloropropane	96-18-4	BLK	2.0 U	ug/L	2.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	2.0 U	ug/L	2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	7.0 U	ug/L	7.0	U
1,2-Dibromoethane	106-93-4	BLK	1.0 U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	1.0 U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	1.0 U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	1.0 U	ug/L	1.0	U
1,3-Dichloropropane	142-28-9	BLK	1.0 U	ug/L	1.0	U
1,4-Dichlorobenzene	106-46-7	BLK	1.0 U	ug/L	1.0	U
2,2-Dichloropropane	594-20-7	BLK	1.0 U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	10.0 U	ug/L	10.0	U
2-Hexanone	591-78-6	BLK	5.0 U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	5.0 U	ug/L	5.0	U
Acetone	67-64-1	BLK	10.0 U	ug/L	10.0	U
Benzene	71-43-2	BLK	1.0 U	ug/L	1.0	U
Bromobenzene	108-86-1	BLK	1.0 U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	1.0 U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	1.0 U	ug/L	1.0	U
Bromoform	75-25-2	BLK	1.0 U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	1.0 U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	1.0 U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	1.0 U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	1.0 U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	1.0 U	ug/L	1.0	U
Chloroform	67-66-3	BLK	1.0 U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	1.0 U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	1.0 U	ug/L	1.0	U
cis-1,3-Dichloropropene	10061-01-5	BLK	1.0 U	ug/L	1.0	U
Dibromomethane	74-95-3	BLK	1.0 U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	1.0 U	ug/L	1.0	U

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	RDL	Qualifiers
Diisopropyl ether	108-20-3	BLK	1.0 U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	1.0 U	ug/L	1.0	U
Hexachlorobutadiene	87-68-3	BLK	5.0 U	ug/L	5.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	1.0 U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	1.0 U	ug/L	1.0	U
mp-Xylene	108383/106423	BLK	2.0 U	ug/L	2.0	U
Naphthalene	91-20-3	BLK	2.0 U	ug/L	2.0	U
o-Chlorotoluene	95-49-8	BLK	1.0 U	ug/L	1.0	U
o-Xylene	95-47-6	BLK	1.0 U	ug/L	1.0	U
p-Chlorotoluene	106-43-4	BLK	1.0 U	ug/L	1.0	U
p-Isopropyltoluene	99-87-6	BLK	1.0 U	ug/L	1.0	U
Styrene	100-42-5	BLK	1.0 U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	1.0 U	ug/L	1.0	U
Toluene	108-88-3	BLK	1.0 U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	3.0 U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	1.0 U	ug/L	1.0	U
trans-1,3-Dichloropropene	10061-02-6	BLK	1.0 U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	1.0 U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	1.0 U	ug/L	1.0	U
Vinyl Acetate	108-05-4	BLK	5.0 U	ug/L	5.0	U
Vinyl Chloride	75-01-4	BLK	1.0 U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	28	30	93.2	62 - 133	
4-Bromofluorobenzene	460-00-4	BLK	31.10	30	104	79 - 114	
Dibromofluoromethane	1868-53-7	BLK	26.60	30	88.8	78 - 116	
Toluene-d8	2037-26-5	BLK	30.20	30	101	76 - 127	

Lab Control Standard 3607100 (LCS) Created on 01/04/2023 09:34 For QC Batch 931887

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1,2-Tetrachloroethane	630-20-6	LCS	21.50		20	107	78 - 121		
1,1,1-Trichloroethane	71-55-6	LCS	20.50		20	103	66 - 130		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	21.60		20	108	74 - 135		
1,1,2-Trichloroethane	79-00-5	LCS	19.60		20	97.9	82 - 126		
1,1-Dichloroethane	75-34-3	LCS	19.10		20	95.4	78 - 124		
1,1-Dichloroethene	75-35-4	LCS	20.70		20	103	63 - 128		
1,1-Dichloropropene	563-58-6	LCS	20.10		20	101	76 - 126		
1,2,3-Trichlorobenzene	87-61-6	LCS	22.40		20	112	61 - 126		
1,2,3-Trichloropropane	96-18-4	LCS	20.50		20	102	75 - 132		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.60		20	103	67 - 123		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	21.90		20	110	59 - 133		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,2-Dibromoethane	106-93-4	LCS	22.10		20	110	80 - 124		
1,2-Dichlorobenzene	95-50-1	LCS	19.30		20	96.3	82 - 118		
1,2-Dichloroethane	107-06-2	LCS	18.90		20	94.6	70 - 133		
1,2-Dichloropropane	78-87-5	LCS	19.60		20	98.2	81 - 127		
1,3-Dichlorobenzene	541-73-1	LCS	18.70		20	93.7	81 - 118		
1,3-Dichloropropane	142-28-9	LCS	20.70		20	104	82 - 126		
1,4-Dichlorobenzene	106-46-7	LCS	22.40		20	112	81 - 116		
2,2-Dichloropropane	594-20-7	LCS	20.30		20	101	64 - 129		
2-Butanone	78-93-3	LCS	125		100	125	50 - 152		
2-Hexanone	591-78-6	LCS	123		100	123	65 - 154		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	118		100	118	71 - 146		
Acetone	67-64-1	LCS	139		100	139	40 - 151		
Benzene	71-43-2	LCS	19.30		20	96.7	80 - 124		
Bromobenzene	108-86-1	LCS	18.60		20	93.1	81 - 119		
Bromochloromethane	74-97-5	LCS	20		20	100	73 - 117		
Bromodichloromethane	75-27-4	LCS	20.30		20	102	79 - 126		
Bromoform	75-25-2	LCS	17.80		20	89.1	70 - 123		
Bromomethane	74-83-9	LCS	24.70		20	124	45 - 148		
Carbon Tetrachloride	56-23-5	LCS	20.40		20	102	62 - 132		
Chlorobenzene	108-90-7	LCS	18.90		20	94.6	85 - 117		
Chlorodibromomethane	124-48-1	LCS	22.40		20	112	77 - 122		
Chloroethane	75-00-3	LCS	29.90		20	150*	51 - 142		
Chloroform	67-66-3	LCS	21.70		20	109	78 - 122		
Chloromethane	74-87-3	LCS	25.30		20	126	38 - 156		
cis-1,2-Dichloroethene	156-59-2	LCS	19.90		20	99.4	78 - 125		
cis-1,3-Dichloropropene	10061-01-5	LCS	21.10		20	105	81 - 121		
Dibromomethane	74-95-3	LCS	21.10		20	105	81 - 125		
Dichlorodifluoromethane	75-71-8	LCS	22.10		20	110	17 - 166		
Diisopropyl ether	108-20-3	LCS	19.50		20	97.4	74 - 131		
Ethylbenzene	100-41-4	LCS	18.90		20	94.4	80 - 124		
Hexachlorobutadiene	87-68-3	LCS	24.40		20	122	55 - 128		
Methyl t-Butyl Ether	1634-04-4	LCS	20.50		20	103	69 - 115		
Methylene Chloride	75-09-2	LCS	21.70		20	109	76 - 121		
mp-Xylene	108383/106423	LCS	39.10		40	97.7	79 - 125		
Naphthalene	91-20-3	LCS	21.80		20	109	56 - 134		
o-Chlorotoluene	95-49-8	LCS	18.30		20	91.5	78 - 126		
o-Xylene	95-47-6	LCS	20.20		20	101	79 - 124		
p-Chlorotoluene	106-43-4	LCS	18.80		20	93.8	78 - 125		
p-Isopropyltoluene	99-87-6	LCS	20.20		20	101	72 - 123		
Styrene	100-42-5	LCS	19.70		20	98.4	79 - 123		
Tetrachloroethene	127-18-4	LCS	19.80		20	98.8	72 - 124		
Toluene	108-88-3	LCS	19.90		20	99.5	80 - 125		
Total Xylenes	1330-20-7	LCS	59.30		60	98.8	79 - 125		
trans-1,2-Dichloroethene	156-60-5	LCS	19.80		20	98.9	71 - 122		
trans-1,3-Dichloropropene	10061-02-6	LCS	17.30		20	86.5	78 - 126		
Trichloroethene	79-01-6	LCS	21.80		20	109	77 - 124		
Trichlorofluoromethane	75-69-4	LCS	29.20		20	146*	38 - 123		

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Vinyl Acetate	108-05-4	LCS	17.50		20	87.5	58 - 136		
Vinyl Chloride	75-01-4	LCS	21.40		20	107	27 - 138		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.20	30	94	62 - 133	
4-Bromofluorobenzene	460-00-4	LCS	29.60	30	98.8	79 - 114	
Dibromofluoromethane	1868-53-7	LCS	28.10	30	93.7	78 - 116	
Toluene-d8	2037-26-5	LCS	28.50	30	95.1	76 - 127	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3280981001	MW-16D	SW846 3510C	931909	01/04/2023 15:10	AJW	SW846 8270E SIM	932363
		N/A	N/A	N/A		SW846 8260D	931887

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUST / REQUEST FOR AN

ALL SHADED AREAS MUST BE CO
SAMPLER. INSTRUCTION

3280981
Logged By: KSB
PM: SJB

C #: 0981 of
Quote #:

Client Name: WSP

Address:
13530 Dulles Technology Dr
Suite 300
Herndon VA

Contact: Eric Johnson
Phone#: (703) 709-6500
Project Name/#: Kop-Flex Onsite
Bill To:
Purchase Order #: 31405608.010

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [ ] -Y

Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	Container Type	Container Size	Preservative	1,4-Dioxane	VOCs						
						AG	CG									
						250	40mL									
						None	HCl									
1 MW-16D	12/29/22	0840		G	GW				2	2						
2																
3																
4																
5																
6																
7																
8																
9																
10																

Unless otherwise Indicated, preservation indicates field filtration on applicable methods

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Sample or Field Results Below.

Circle Sample Collector: ALS Tech (Client)
Elliott Martyniewicz ID:

Comments:

Receipt Information (completed by Receiving Lab)

Temp Taken By: KSB Therm ID: 570 WO Temp (°C) 4
Receipt Info completed by: KSB WV Containers 0-6°C Y N (NA)

Cooler Custody Seals Intact	(Y)	N	NA
Sample Custody Seal Intact	Y	N	(NA)
Received on Ice	(Y)	N	NA
Coolers & Samples Intact	(Y)	N	
Correct Containers Provided	(Y)	N	
Sample Label/COC Agree	(Y)	N	
Adequate Sample Volumes	(Y)	N	
VOA only: Headspace Present	Y	(N)	(NA)
VOA only: Trip Blank	Y	(N)	(NA)

Deviations? (NO) YES
If YES, list below:

Client contact:
Date/Tech:

NJ ≤ 4 days? Y N
Courier/Tracking #: 8127 8179 4090

Sample(s) for Radiation testing? Y N Rad Screen (uCi)_____
Reportable SDWA Sample(s)? Y N New Source? Y N
SDWA State of Origin?_____ New Source Contact:
PWSID #_____
PWS Contact:_____ PWS Phone #:_____

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Date:	Time		Relinquished By / Company Name		Received By / Company Name
12/29/22	1555	1	WSP	2	Fedex
12.30.22	921	3	Fedex	4	
		5		6	
		7		8	
		9		10	

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [ ] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ] _____

EDD: [ ] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] other _____

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater