

**JUNE 2019 SURFACE WATER TECHNICAL
MEMORANDUM FOR DARK HEAD COVE
AND COW PEN CREEK
LOCKHEED MARTIN CORPORATION
MIDDLE RIVER COMPLEX
2323 EASTERN BOULEVARD
MIDDLE RIVER, MARYLAND**

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ACRONYMS AND ABBREVIATIONS

AECOM	AECOM Technical Services, Inc.
BGE	Baltimore Gas and Electric
BTAG	Biological Technical Advisory Group
<i>cis</i> -1,2-DCE	<i>cis</i> -1,2-dichloroethene
DO	dissolved oxygen
g/d/foot	gallon(s) per day per foot
GIS	geographic information system
gpm	gallon(s) per minute
HASP	health and safety plan
Lockheed Martin	Lockheed Martin Corporation
MDE	Maryland Department of the Environment
MRC	Middle River Complex
ORP	oxygen reduction potential
QC	Quality Control
TCE	trichloroethene
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

EXECUTIVE SUMMARY

On behalf of Lockheed Martin Corporation, AECOM Technical Services, Inc., has prepared this technical memorandum documenting the June 2019 surface water monitoring event at the Lockheed Martin Corporation Middle River Complex in Middle River, Maryland. This technical memorandum is part of the long-term groundwater and surface water monitoring program at the Middle River Complex. The objectives for the surface water monitoring program are to update surface water analytical data, understand the nature and extent of contamination, evaluate contaminant trends to supplement ongoing remediation efforts, and assess off-site contaminant migration. Investigative activities conducted from 2018 to 2020 as part of this surface water monitoring program include three annual rounds of sampling and chemical analysis of surface water in Dark Head Cove and Cow Pen Creek in April, June, and September of each year.

This technical memorandum evaluates the June 2019 surface water sampling analytical data based on current and historical results and estimates of potential groundwater to surface water discharge. On-site personnel collected 24 samples (21 field samples, one duplicate sample, a matrix spike, and a matrix spike duplicate) from 21 sampling locations in Cow Pen Creek and Dark Head Cove on June 12, 2019, on behalf of Lockheed Martin Corporation. Surface water samples were collected and sent to ALS Environmental in Middletown, Pennsylvania to be chemically analyzed for volatile organic compounds and 1,4-dioxane. Seven of the 21 surface water sampling locations were analyzed for 1,4-dioxane (MRC-SW6A-S, MRC-SW6B-S, MRC-SW8A-S, MRC-SW8B-S, MRC-SW17A, MRC-SW1A, and MRC-SW2A). The analytical results were evaluated with respect to ecological and human health screening-level criteria, including:

- Maryland ambient water quality criteria for human health consumption of organisms (Code of Maryland Regulations 26.08.02.03)
- United States Environmental Protection Agency National Recommended Water Quality Criteria – human health criteria, consumption of organism only (United States Environmental Protection Agency, 2015)
- United States Environmental Protection Agency National Recommended Aquatic Life Criteria – freshwater, acute and chronic criteria (United States Environmental Protection Agency, 2018a)

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- United States Environmental Protection Agency Region III Biological Technical Advisory Group freshwater screening levels (United States Environmental Protection Agency, 2006)
 - If no benchmarks were listed by United States Environmental Protection Agency Region III, guidance from United States Environmental Protection Agency Region IV (United States Environmental Protection Agency, 2018b) and Region V (United States Environmental Protection Agency, 2003) were reviewed for additional ecological benchmarks.
 - Risk-based site-specific swimming screening levels developed in 2019 for trichloroethene, cis 1,2 dichloroethene, 1,2,4-trichlorobenzene, and 1,4-dioxane for Dark Head Cove and Cow Pen Creek at the Middle River Complex. These risk-based screening values were approved by the Maryland Department of the Environment in 2019 (Lockheed Martin Corporation, 2019).

Findings from the June 2019 surface water sampling are as follows:

- 1,4-dioxane – detected at a total of four locations: MRC-SW1A, MRC-SW2A, and MRC-SW17A in Cow Pen Creek and MRC-SW6A-S in Dark Head Cove below screening levels
- chloroform – detected at one location (MRC-SW17A) in Cow Pen Creek below screening levels
- *cis*-1,2-dichloroethene – detected at three locations (MRC-SW11A-S, MRC-SW12A-S, and MRC-SW13A-S) in Dark Head Cove below screening levels
- trichloroethene – detected at one location (MRC-SW15A-S) in Dark Head Cove below screening levels

SECTION 1 INTRODUCTION

On behalf of Lockheed Martin Corporation, AECOM Technical Services, Inc., has prepared the following technical memorandum for the June 2019 surface water monitoring at the Middle River Complex in Middle River, Maryland (see Figure 1). This technical memorandum details the analytical results from 24 samples (21 field samples, one duplicate sample, a matrix spike, and a matrix spike duplicate) from 21 sampling locations in Cow Pen Creek and Dark Head Cove on June 12, 2019. The objectives for the surface water monitoring program are to update surface water analytical data, understand the nature and extent of contamination, evaluate contaminant trends to supplement ongoing remediation efforts, and to assess off-site contaminant migration.

Before 2017, surface water had been sampled annually by Tetra Tech, Inc. In 2017, the sampling frequency increased to three times per year (April, June, and September) to assess whether volatile organic compounds were reaching Dark Head Cove and Cow Pen Creek during implementation of the groundwater remedy at concentrations exceeding site-specific risk-based swimming screening levels. Additional sampling (as compared to previous surface water events) was conducted in 2017 to determine if polychlorinated biphenyls were in surface water subsequent to the sediment removal actions and in-place treatment that Lockheed Martin Corporation performed in Dark Head Cove between 2013 and 2017, and to determine if the Block G 1,4-dioxane groundwater plume is potentially discharging to Cow Pen Creek.

Surface water samples collected in Dark Head Cove in 2017 were not analyzed for 1,4-dioxane, as it was not a chemical of concern in groundwater in the southeastern portion of the Middle River Complex. Selected surface water samples collected in 2019 are analyzed for 1,4-dioxane because it had been detected in the 2017 groundwater samples in the southeastern Blocks E and F plume, and site-specific swimming screening levels had since been revised lower.

This technical memorandum is organized as follows:

- Section 1—Introduction: Presents objectives for the surface water monitoring program.

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- Section 2—Site Background: Briefly describes site history and surface water sampling history.
 - Section 3—Investigation Approach and Methodology: Presents the technical approach to surface water sampling and describes the field methodology employed.
 - Section 4—Analytical Results: Discusses the analytical results for each analyte.
 - Section 5 – Conclusions: Summarizes findings and conclusions.
 - Section 6—References: Cites references used to compile this technical memorandum.

SECTION 2 SITE BACKGROUND

The Middle River Complex is part of the Chesapeake Industrial Park at 2323 Eastern Boulevard in Middle River, Maryland, approximately 11.5 miles northeast of downtown Baltimore. It is composed of approximately 161 acres, including 12 main buildings, an active industrial area and yard, perimeter parking lots, an athletic field, a vacant concrete lot, a trailer and parts storage lot, and numerous grassy spaces along its perimeter. It is bounded by Eastern Boulevard (Route 150) to the north, Martin State Airport to the east, Dark Head Cove to the south, and Cow Pen Creek to the west. Figure 2 shows the Middle River Complex site layout.

LMC Properties, Inc., owns the Middle River Complex. Its primary activities at the Middle River Complex include facility and building management and maintenance. The main site tenant, MRA Systems, LLC, whose ownership was transferred to Vision Technologies Aerospace Incorporated (United States subsidiary of Singapore Technologies Engineering Ltd.) in April 2019, designs, manufactures, fabricates, tests, overhauls, repairs, and maintains aeronautical structures, parts, and components for military and commercial applications. Lockheed Martin Rotary and Mission Systems (a division of Lockheed Martin Corporation) conducts engineering activities and fabricates, assembles, tests, and otherwise supports vertical-launch systems.

2.1 MIDDLE RIVER COMPLEX HISTORY

In 1929, the Glenn L. Martin Company (a predecessor entity of Lockheed Martin Corporation) acquired large parcels of undeveloped land in Middle River, Maryland, on which to manufacture aircraft for the United States government and commercial clients. In the early 1960s, Glenn L. Martin Company merged with American-Marietta Company to form Martin Marietta Corporation. Around 1975, the adjacent eastern airport area (currently Martin State Airport), approximately 750 acres, was transferred to the State of Maryland. In the mid-1990s, Martin Marietta Corporation merged with Lockheed Corporation to form Lockheed Martin Corporation. Shortly after the merger, General Electric Company entities acquired most of Lockheed Martin Corporation's aeronautical business in Middle River and the General Electric subsidiary, MRA Systems, Inc., began operations at the site. MRA Systems, Inc. was sold to Vision Technologies

Aerospace Incorporated (United States subsidiary of Singapore Technologies Engineering Ltd.)
in April 2019.

2.1.1 Middle River Complex Characteristics

2.1.1.1 Physiography

The Middle River Complex is in the Western Shore of the Coastal Plain physiographic province, which is generally characterized by low relief. The Middle River Complex's topography slopes gently, ranging from sea level to 32 feet above mean sea level (Cassell, 1977). The topography declines from Eastern Boulevard to the southwest and south toward Cow Pen Creek and Dark Head Cove.

2.1.1.2 Hydrology

The Middle River Complex is at the junction of Cow Pen Creek and Dark Head Cove. Both surface water bodies discharge into Dark Head Creek, a tributary of Middle River, which is a tributary of Chesapeake Bay. The Middle River Complex is approximately 3.24 miles (17,100 feet) upstream of Chesapeake Bay. The Middle River Complex has no surface water bodies on site. Surface water runoff discharges from the facility via storm drains, except for areas immediately adjacent to Cow Pen Creek and Dark Head Cove.

2.1.1.3 Regional Hydrogeology

Sand and gravel zones in the unconsolidated surficial deposits at the Middle River Complex, when present, might form an unconfined or water table aquifer system (Bennett and Meyer, 1952). The water table at the Middle River Complex generally conforms to the land surface, with the highest water levels in interior land areas and the lowest levels at approximately surface water elevations along the shoreline.

Regionally, the Patuxent Formation is the most important water-bearing formation in the Baltimore area. Industrial wells in the southeastern part of the area, specifically Curtis Bay and Sparrows Point, yield 500–900 gallons per minute (gpm). In these industrialized areas, the transmissivity and storage coefficient in confined portions of the aquifer average about 50,000 gallons per day per foot (g/d/feet) and 0.00026, respectively.

The Patapsco Formation is also an important water-bearing formation in industrialized Baltimore, where it is separated by clay into a lower and an upper aquifer. Industrial wells

screened in the lower aquifer yield as much as 500–750 gpm, with an estimated transmissivity of 25,000 g/d/feet (Bennett and Meyer, 1952). The upper aquifer yields quantities of water similar to industrial wells, but likely has a higher overall transmissivity, because it is thicker than the lower aquifer.

2.2 SURFACE WATER

Dark Head Cove and Cow Pen Creek receive groundwater discharge from the Middle River Complex either directly or through infiltration into storm drains and outfalls. Chemicals of concern found in Middle River Complex groundwater (e.g., trichloroethene and 1,4-dioxane) have historically been detected at low levels both in creek and cove samples. Sampling of surface water and sediment adjacent to the Middle River Complex’s southern and western property boundaries began in March 2005 (Tetra Tech Inc., 2005).

Tetra Tech Inc. conducted subsequent sampling in 2005 and in each year from 2010–2017 to characterize surface water and sediment, conduct a human health and ecological risk assessment, aid in subsequent design of the sediment remedy, and to support storm-drain investigations (Tetra Tech Inc., 2017b).

The current annual surface water sampling program seeks to determine the extent to which chemicals in groundwater, soil, and residual sediment contamination at the Middle River Complex have been transported to surface water, and if constituents in all these media might be affecting surface water. The sampling program (occurring in April, June, and September) is also designed to provide analytical data during times of greatest recreational use of these surface water bodies.

SECTION 3

INVESTIGATION APPROACH AND METHODOLOGY

The objectives for the surface water monitoring program are to update surface water analytical data, understand the nature and extent of contamination, evaluate contaminant trends to supplement ongoing remediation efforts, and to assess off-site contaminant migration. Before beginning fieldwork, personnel from AECOM Technical Services, Inc. (AECOM) reviewed the site-specific health and safety plan (HASP) and the respective “Safe Work” permits and emergency response plan included in the HASP. Surface water sampling nomenclature for all locations sampled includes the “MRC-” prefix, so all references to locations in Sections 3 and 4 will be abbreviated to exclude the prefix (e.g., “MRC-SW1A” to “SW1A” and “MRC-SW18A-S” to “SW18A-S”).

AECOM conducted mandatory health and safety tailgate meetings before each day’s fieldwork and twilight debrief meetings at the end of each day. The AECOM site health and safety officer documented the topics covered and personnel in attendance. Safety requirements are addressed in detail in the site-specific AECOM HASP, included in the *2018–2020 Groundwater and Surface Water Monitoring Work Plan* and its associated addenda (AECOM, 2017, 2018a, 2018b, 2019).

3.1 SURFACE WATER SAMPLING

The June 2019 surface water sampling described herein provides additional and updated surface water quality data for Dark Head Cove and Cow Pen Creek. One goal of this investigation is to determine whether volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and/or 1,4-dioxane previously detected in groundwater and soil are reaching Dark Head Cove and Cow Pen Creek via groundwater seepage, infiltration, or transport through nearby storm drains at concentrations greater than the established site-specific risk-based swimming screening levels. Concentrations of VOCs and 1,4-dioxane in surface water were determined through laboratory analyses of the collected samples. Analytical testing for PCBs is performed only in the April round of sampling for Dark Head Cove samples.

All samples in Dark Head Cove and Cow Pen Creek were collected with dedicated, disposable tubing, attached to a depth transducer that was part of the YSI water quality meter, which measures the water quality parameters outlined in Section 4.4. The meter was lowered to one foot below the water surface and marked by electrical tape on the cord at the one foot mark. The appropriate length of tubing was cut (to ensure collection from one foot below the water surface) and samples were collected via a peristaltic pump set at a purge rate of approximately 500 milliliters per minute. All samples collected are designated with an “S” in the sample ID, indicating surface water collection from one foot below the water surface.

3.1.1 Dark Head Cove

Eighteen surface water samples were collected in Dark Head Cove at and near Outfalls 005E, 005W, 006, 007, 008, and 009 which discharge to the cove (Figure 3). Two samples were collected at Outfalls 006, 007, 008, and 009: one sample from 10-foot offshore (“A” sample) and a second sample from 50-foot offshore (“B” sample) at each of the above listed outfall locations. Three sampling locations west of Outfall 008 (SW13A-S, SW15A-S, and SW16A-S) have no associated “B” sample. These surface water samples were collected 10 feet offshore. These samples collect surface water from the area where the groundwater plume (originating in Block E and flowing through Block F) discharges to Dark Head Cove.

Four additional samples were taken during this sampling event as compared to the 2018 June surface water sampling program west of Outfall 008 (SW11A-S, SW11B-S, SW12A-S, and SW18A-S). SW18A-S was added to the surface water sampling program in 2019. This location is approximately 150 feet east of Outfall 005E and downgradient of Transformer Room #3 which is associated with the chlorobenzene groundwater plume in the southwestern region of Blocks E and F.

Two outlets are at Outfalls 005: 005E and 005W. One sample was collected at each outlet, 10 feet offshore, recorded as the 5A1-S and 5A2-S samples. A single sample was collected 50 feet offshore, perpendicular to the bulkhead and halfway between the outlets, and was recorded as the “B” sample.

3.1.2 Cow Pen Creek

Two samples (SW1A and SW2A) were collected along the centerline of Cow Pen Creek downgradient of Outfall 004, with one sample collected upstream near the Block G swale outfall and one sample collected downstream of the Block G swale outfall. A third sample (SW17A) was collected near Outfall 003 and represents the farthest upgradient sample that can be collected within the site boundaries. SW17A was collected immediately downstream of the Baltimore Gas and Electric (BGE) property boundary. Table 1 summarizes the analytical constituents included in the 2019 monitoring program.

3.1.3 Chemical Analyses

Surface water samples were analyzed at ALS Environmental in Middletown, Pennsylvania for chemical analysis of VOCs and 1,4-dioxane. Sampling methods are described in the *2018-2020 Groundwater and Surface Water Monitoring Work Plan* (AECOM, 2017). Analytical methods are documented in the footnotes of Table 1.

One field duplicate and two matrix spike pairs were analyzed during the June 2019 surface water sampling. The field duplicate parameters included VOCs and 1,4-dioxane. One matrix spike pair included all parameters (VOCs and 1,4-dioxane) and the other matrix spike pair only included VOCs. The second matrix spike pair was performed using extra sample volume from location SW15A-S for the laboratory to meet its internal quality control (QC) frequency goal. Therefore, the matrix spike pair frequency met the programmatic goal of one per 20 samples, for each matrix and each parameter. The programmatic goal of one field duplicate per 20 samples for each matrix and parameter was not met for the June 2019 sampling event. Prior to sampling, an additional surface water sample location was added to the scope of work, creating a total of 21 sample locations, which was not reflected in the field QC count established during project planning. The QC sampling frequency will be increased in all future surface water sampling events in 2020 to ensure a minimum frequency of one per 20. Based on the data reviewed, the field duplicate collected is representative of all 21 surface water samples collected. Furthermore, no instances of duplicate heterogeneity or imprecision were observed in the June 2019 surface water data or in any previous surface water data collected by AECOM under this program. Therefore, no impact on data quality is anticipated. One trip blank sample per cooler was submitted for VOC analysis. One field blank was collected off the side of the sampling vessel in Dark Head Cove for VOC and 1,4-dioxane analyses.

Water quality parameters, including color, temperature, pH, specific conductance, hardness, salinity, turbidity, dissolved oxygen, and oxidation-reduction potential, were measured at all surface water sampling locations at the time of sampling.

3.1.4 Staff Gauges and Tidal Stages

Tidal stage at the time of sample collection was recorded from two staff gauges shown on Figure 3. One staff gauge is in Dark Head Cove at the confluence with the mouth of Cow Pen Creek (STAFF02) and the other is in Dark Head Cove in the vicinity of Outfall 009 (STAFF01). Tidal stages were recorded on June 12, 2019, before and after sampling. When sampling began in Dark Head Cove on June 12, MRC-STAFF01 read 0.0 feet at approximately 1105 hours. By the completion of the Dark Head Cove sampling, the staff gauge read 0.3 feet at approximately 1500 hours. When sampling began in Cow Pen Creek on June 12th, MRC-STAFF02 read 0.3 feet at approximately 1525 hours. By the completion of the Cow Pen Creek sampling, the staff gauge read 0.4 feet at approximately 1600 hours.

Tidal information from the Bowley Bar Point station, southeast of Middle River, Maryland, reported low tide at 1046 hours on June 12, 2019. All tidal information is documented on the surface water sampling forms, in Appendix A.

3.1 MOBILE DATA COLLECTION DOCUMENTATION

All site activities and observations, including an overall record of field activities, were recorded on electronic field log sheets and submitted in daily field reports to the Lockheed Martin Remediation Technical Operations contractor (remediation oversight contractor for Lockheed Martin Corporation). and Lockheed Martin Corporation. Completed chains-of-custody (COC) and matrix specific sampling log sheets were maintained. Completed COC forms are presented in the *Data-Validation Report* in Appendix B. AECOM used two of Esri's mobile applications, *Survey123* and *Collector for ArcGIS*[®], during groundwater and surface-water data collection. They feature map and business logic that enhance a technician's ability to locate and record accurate and timely data. All electronic data collection forms were designed to be consistent with the forms in Appendix A.

Once in the field, if the technician required location services, needed to reference a base map, or needed to add or edit a location, *Collector for ArcGIS*[®] was used. The technician was also able to

review historical information about the location, make edits, and take photos with the application, as required. New data records were created within *Survey123*, leveraging form-based business logic, including related reference tables, if/then-style follow-up fields, and the ability to format data into a database-compatible spreadsheet.

Upon sampling completion, the technician submitted the record from their mobile device, where it was synchronized with AECOM's *Portal for ArcGIS*[®]. The team could access data immediately once it had synchronized. Data were downloaded from *Portal for ArcGIS*[®] and were available to be used in any other geographic information system (GIS) or database management system. Surface-water sampling locations were also surveyed using a handheld global positioning system receiver in the Maryland State Plane North American Datum 1983.

3.2 EQUIPMENT DECONTAMINATION

No decontamination fluids other than distilled water were used for the surface water sampling. Distilled water rinse was discharged directly into Dark Head Cove or Cow Pen Creek. Therefore, collecting and disposing of rinse water generated during this sampling event was not necessary.

3.3 WASTE MANAGEMENT

No investigation-derived waste was generated during this surface water sampling. General waste, such as gloves and tubing, was disposed of as general refuse.

3.4 DATA REVIEW

Laboratory data were entered into an internal sample database and evaluated against site-specific risk-based swimming screening levels and applicable regulatory criteria. AECOM performed a manual data review and data validation using the *EQuIS*[™] *Automated Validation Assistant* tool. This included completing a limited data review (evaluating data completeness, holding times, laboratory and field blank contamination, laboratory batch quality control, field duplicate precision, and detection limits) concurrent with the data evaluation review. The review is based on the United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA-540-R-2017-002, January 2017a) and USEPA *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 540-R-2017-001, January 2017b) for an Organic/Inorganic Level I (<https://www.epa.gov/quality/epa-region-3-data-validation>) data review. Data were reviewed

based on the specifics of the analytical method used. The data-qualifying flags applied to the surface water chemical results during data validation are identified in the *Data Validation and Usability Report* in Appendix B. The analytical laboratory reports can be found in Appendix C. AECOM has uploaded the surface water sampling locations and validated data into the Lockheed Martin EESH-GIS database.

3.5 SUSTAINABILITY APPROACH

AECOM incorporated Green and Sustainable Remediation practices into the groundwater and surface water monitoring program at the MRC to advance Lockheed Martin's Corporate ESH key objectives to protect, enhance, optimize and simplify, and to highlight the added values that sustainable practices bring.

AECOM implemented sustainable approaches in all aspects of work wherever practical and with prior approval from Lockheed Martin and the Lockheed Martin Remediation Technical Operations contractor. For the MRC monitoring program, AECOM implemented paper-free electronic data collection across all aspects of the surface water sampling program. This data collection approach and the use of dedicated reusable tubing and rechargeable batteries for field instruments reduced total waste and provided resource efficiency. The utilization of local field staff, carpooling, and the use of locally sourced materials wherever possible contributed to reduced overall mobile emissions.

SECTION 4 ANALYTICAL RESULTS

Validated analytical data from the June 2019 surface water sampling were evaluated with respect to ecological and human health screening-level criteria, including:

- Maryland ambient water quality criteria for human health consumption of organisms (Code of Maryland Regulations [COMAR] 26.08.02.03)
- United States Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria – human health criteria, consumption of organism only (USEPA, 2015)
- USEPA National Recommended Aquatic Life Criteria – freshwater, acute and chronic criteria (USEPA, 2018a)
- USEPA Region III Biological Technical Advisory Group (BTAG) freshwater screening levels (USEPA, 2006)
 - If no benchmarks were listed by USEPA Region III, guidance from USEPA Region IV (USEPA, 2018b) and Region V (USEPA, 2003) were reviewed for additional ecological benchmarks.
- Risk-based site-specific swimming screening levels developed in 2019 for trichloroethene (TCE), *cis* 1,2 dichloroethene (*cis*-1,2-DCE), 1,2,4-trichlorobenzene (1,2,4-TCB), and 1,4-dioxane for Dark Head Cove and Cow Pen Creek at the Middle River Complex (MRC). These risk-based screening values were approved by the Maryland Department of the Environment (MDE) in 2019 (Lockheed Martin Corporation [Lockheed Martin], 2019).

Site contaminants in groundwater at the MRC could potentially be introduced to surface water through groundwater discharge or through groundwater infiltration into storm drains, thereby discharging to surface water through nearby outfalls. The objectives for the surface water monitoring program are to update surface water analytical data, understand the nature and extent of contamination, evaluate contaminant trends to supplement ongoing remediation efforts, and to assess off-site contaminant migration. The analytical data suggest that a method of transporting groundwater contaminants of concern to surface water exists (notably *cis*-1,2-DCE and TCE at SW12A-S), via either of the two pathways described above. Table 2 outlines the detected analytes from each sampling location and compares that to the screening levels established by each of the above entities.

4.1 VOLATILE ORGANIC COMPOUNDS

Table 2 summarizes volatile organic compound (VOC) and 1,4-dioxane detections in June 2019. The distribution of detections is shown in Figure 4. Three VOCs were detected in surface water: chloroform, *cis*-1,2-DCE, and TCE. These same compounds were detected during the April 2019 sampling event as well as during the 2018 sampling events. During the data validation, several minor anomalies were noted in the VOC analysis which is to be anticipated based on statistical predictability of standard analytical procedures. Several field sample results were qualified due to these minor anomalies. All data are considered usable as qualified, for their intended purpose based on the data reviewed. Any data points qualified “B” due to associated blank detections should be considered as false positives and treated as non-detect due to potential laboratory contamination or carryover. For the June 2019 sampling event, five of the six TCE detections are qualified “B”. VOC analytes that were associated with equipment blank, field blank, and/or method blank contamination include acetone, bromomethane, chloromethane, and trichloroethene. During data validation of the laboratory results, thirty-three of the thirty-seven detected analytes between all field samples were assigned a “J” as a final qualifier, indicating that this value is an estimated concentration greater than the method detection limit and less than the reporting limit. A summary of all data validation findings and qualified results can be found in the *Data Validation and Usability Report* in Appendix B.

TCE, the primary VOC of concern associated with groundwater at MRC, was detected at one sampling location in Dark Head Cove: SW15A-S, at a concentration of 0.880 µg/L. *cis*-1,2-DCE, a breakdown product of TCE, was detected at three sampling locations in Dark Head Cove: SW11A-S, SW12A-S, and SW13A-S at concentrations ranging from 0.360 to 0.410 µg/L. These sampling locations are at the southwest corner of the presumed discharge area of the Blocks E and F southeastern TCE groundwater plume.

As shown in Table 2, the detected VOC concentrations are well below their various respective screening criteria. The highest TCE concentration in 2019 was 4.2 µg/L at sampling location SW12A-S during the April event, compared to the highest TCE concentration of 2.4 µg/L at SW11A-S from the most recent sampling in June 2019. Surface water sample locations SW11A-S and SW16A-S are side-gradient of Outfall 008 and in the southwestern portion of the southeastern TCE plume that is discharging to Dark Head Cove. The highest *cis*-1,2-DCE concentration in 2019 was detected during the April sampling event at a concentration of 1.1

µg/L at sample location SW12A-S. During the 2019 June sampling event, the highest detection of *cis*-1,2-DCE was detected at the same location at a concentration of 0.41 µg/L.

Chloroform was detected at one location in Cow Pen Creek (SW17A) at a concentration of 0.470 µg/L below screening levels.

USEPA and MDE have not established acute or chronic freshwater criteria for TCE; however, both entities have established a human health consumption-of-aquatic-organism criterion of 300 µg/L for TCE when adjusted for the MDE risk level of 1×10^{-05} (i.e., a one in 100,000 risk). The BTAG ecological screening level for TCE is 21 µg/L. The maximum TCE concentration (0.880 µg/L) detected in this investigation is 23 times below the most conservative regulatory screening level of 21 µg/L, and more than 34 times below the MDE-approved risk-based swimming screening level of 30 µg/L for evaluating exposure risks to swimmers (Table 2).

USEPA and MDE have not established acute or chronic freshwater criteria or a human health consumption-of-aquatic-organism criterion for *cis*-1,2-DCE; however, the MDE-approved risk-based swimming screening level of 20 µg/L for evaluating exposure risks to swimmers was developed. The maximum *cis*-1,2-DCE concentration from the June sampling event of 0.410 µg/L is more than 48 times below the risk-based swimming screening level.

4.2 1,4-DIOXANE

As shown in Table 2 and on Figure 4, 1,4-dioxane was detected in all three surface water sample from Cow Pen Creek and in one surface water sample in Dark Head Cove (SW6A-S). The highest 1,4-dioxane concentration of 0.057µg/L is from SW17A in Cow Pen Creek, which is consistent with historical detections. During data validation of the laboratory results, all four samples were assigned a “J” as a final qualifier for 1,4-dioxane, indicating that this value is an estimated concentration greater than the method detection limit and less than the reporting limit. These concentrations are negligible compared to the USEPA ecological screening level of 22,000 µg/L. The concentrations are also below the MDE-approved risk-based swimming screening level of 20 µg/L.

4.3 WATER QUALITY PARAMETERS

Water quality parameters were collected in the field for each of the 21 field samples and one duplicate sample collected during the June 2019 sampling. Water quality parameters, including

color, temperature, pH, specific conductance, hardness, salinity, turbidity, dissolved oxygen, and oxidation-reduction potential (ORP), were measured at all surface water sampling locations at the time of sampling. All water-quality-parameter data are in Table 3. Associated parameters were measured at approximately one foot below the water surface, before sample collection.

All sampling locations have slightly basic pH values, ranging between 7.06 and 8.33. These values are consistent with natural surface water in this region. Turbidity was consistent in most samples, with the highest turbidity reported from SW1A within Cow Pen Creek at 26.1 nephelometric turbidity units.

Dissolved oxygen are typical values, ranging from 4.33 to 6.54 milligrams per liter, indicating a healthy estuarine environment. Additionally, all ORP values are positive, ranging from 168.8 to 198.4 millivolts, consistent with surface water containing oxygen.

SECTION 5 CONCLUSIONS

AECOM Technical Services, Inc., collected 24 samples (21 field samples, one duplicate sample, a matrix spike, and a matrix spike duplicate) from 21 sampling locations at Cow Pen Creek and Dark Head Cove on June 12, 2019, on behalf of Lockheed Martin Corporation. The samples were collected, sent to a laboratory, and chemically analyzed for volatile organic compounds and 1,4-dioxane. These analyses were carried out to determine if these constituents are present in surface water.

Trichloroethene was detected at one location (MRC-SW15A-S) in Dark Head Cove and adjacent to the southeastern Blocks E and F trichloroethene plume at a concentration of 0.880 µg/L. Five of the six samples that reported detections of trichloroethene were qualified “B” due to associated blank detections. Therefore, these detections should be considered false-positives and are treated as non-detects. The one remaining trichloroethene detection in surface water sample MRC-SW15A-S likely is due to groundwater to surface water discharge of the nearby trichloroethene impacted groundwater plume, originating in Block E and discharging through Block F. This trichloroethene concentration is below the United States Environmental Protection Agency screening level value of 21 micrograms per liter (µg/L), well below the human health consumption of organism’s level of 300 µg/L per the Code of Maryland Regulations, and well below the site-specific risk-based swimming screening level of 30 µg/L.

Cis-1,2-dichloroethene, a breakdown product of trichloroethene, was detected in three surface water samples in Dark Head Cove, adjacent to the southeastern Blocks E and F trichloroethene plume: MRC-SW11A-S, MRC-SW12A-S, and MRC-SW13A-S at concentrations of 0.37 µg/L, 0.41 µg/L, and 0.36 µg/L, respectively. The maximum *cis*-1,2-DCE concentration detected in this June 2019 investigation is more than 48 times below the most conservative screening criteria of the MDE-approved site-specific risk-based swimming screening level of 20 µg/L for evaluating exposure risks to swimmers.

1,4-dioxane was detected in all three surface water samples from Cow Pen Creek and one surface water sample in Dark Head Cove (MRC-SW6A-S) with the highest concentration of 0.057 ug/L

from SW17A in Cow Pen Creek. These concentrations are negligible compared to the USEPA ecological screening level of 22,000 µg/L. The concentrations are also well below the site-specific screening criterion for swimming of 20 µg/L.

The June 2019 surface water sampling detections are consistent with historical concentrations of detected analytes in surface water. The groundwater/surface water relationship is dynamic in nature, influenced by tidal-zone mixing and mechanisms of the groundwater/surface water discharge/recharge relationship, likely creating an uneven distribution of contaminants within Dark Head Cove and Cow Pen Creek. This groundwater/surface water relationship is being further evaluated as part of ongoing investigations.

SECTION 6 REFERENCES

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FIGURES

Figure 1 Middle River Complex Location Map
Figure 2 Site Layout and Tax Blocks
Figure 3 2019 Surface Water Sampling Locations
Figure 4 Analytes Detected in Surface Water Samples, June 2019

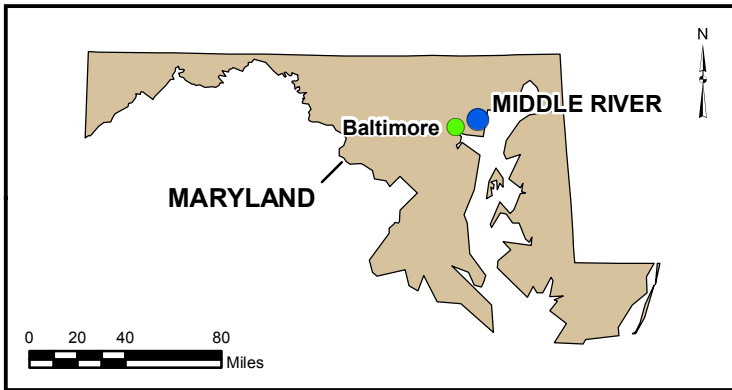


FIGURE 1

**MIDDLE RIVER COMPLEX
LOCATION MAP**

*Lockheed Martin Middle River Complex
Middle River, Maryland*

DATE MODIFIED:

01/15/19

CREATED BY:

JEE

AECOM

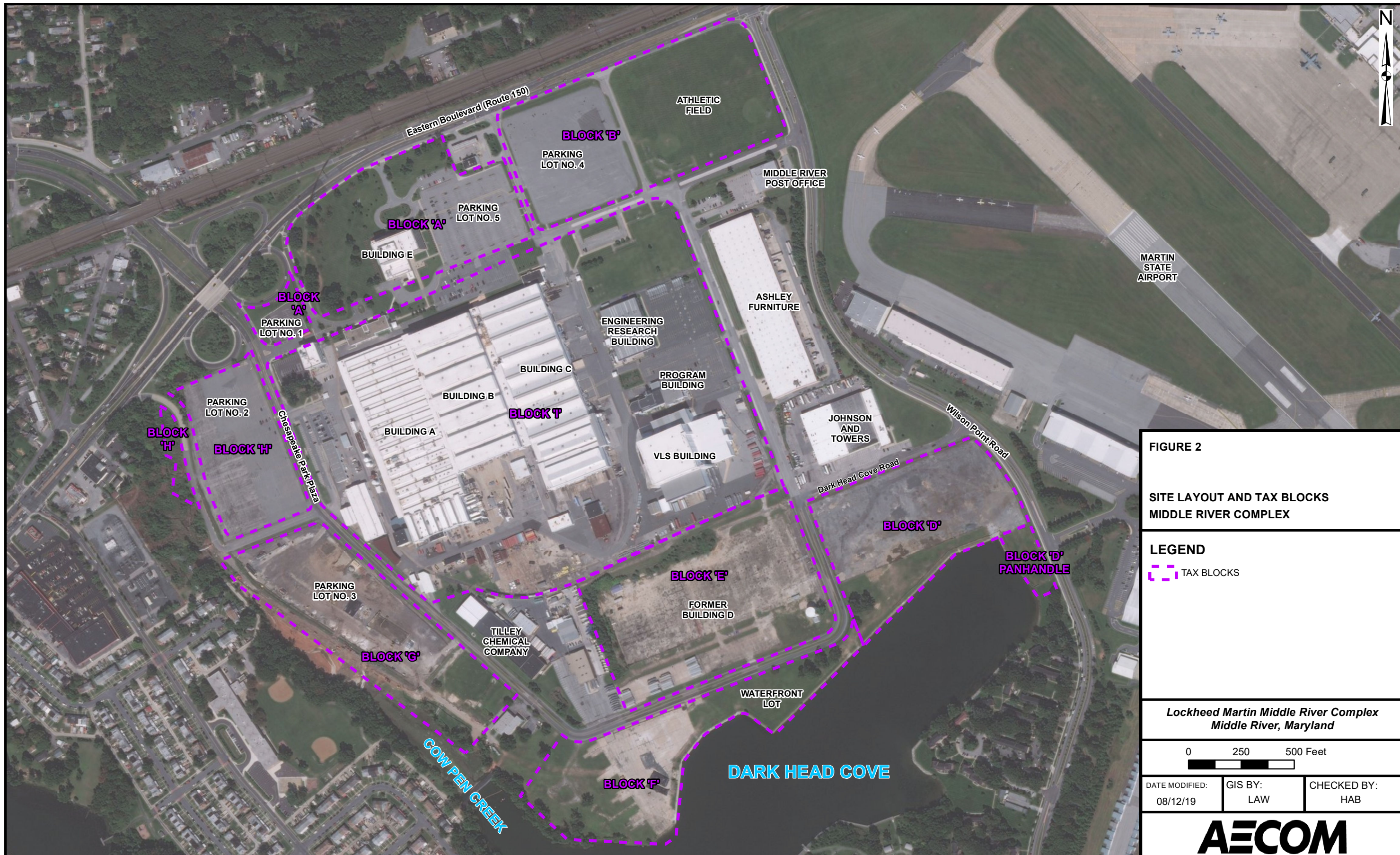


FIGURE 2

**SITE LAYOUT AND TAX BLOCKS
MIDDLE RIVER COMPLEX**

LEGEND

TAX BLOCKS

**Lockheed Martin Middle River Complex
Middle River, Maryland**

0 250 500 Feet

DATE MODIFIED: 08/12/19	GIS BY: LAW	CHECKED BY: HAB
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AECOM

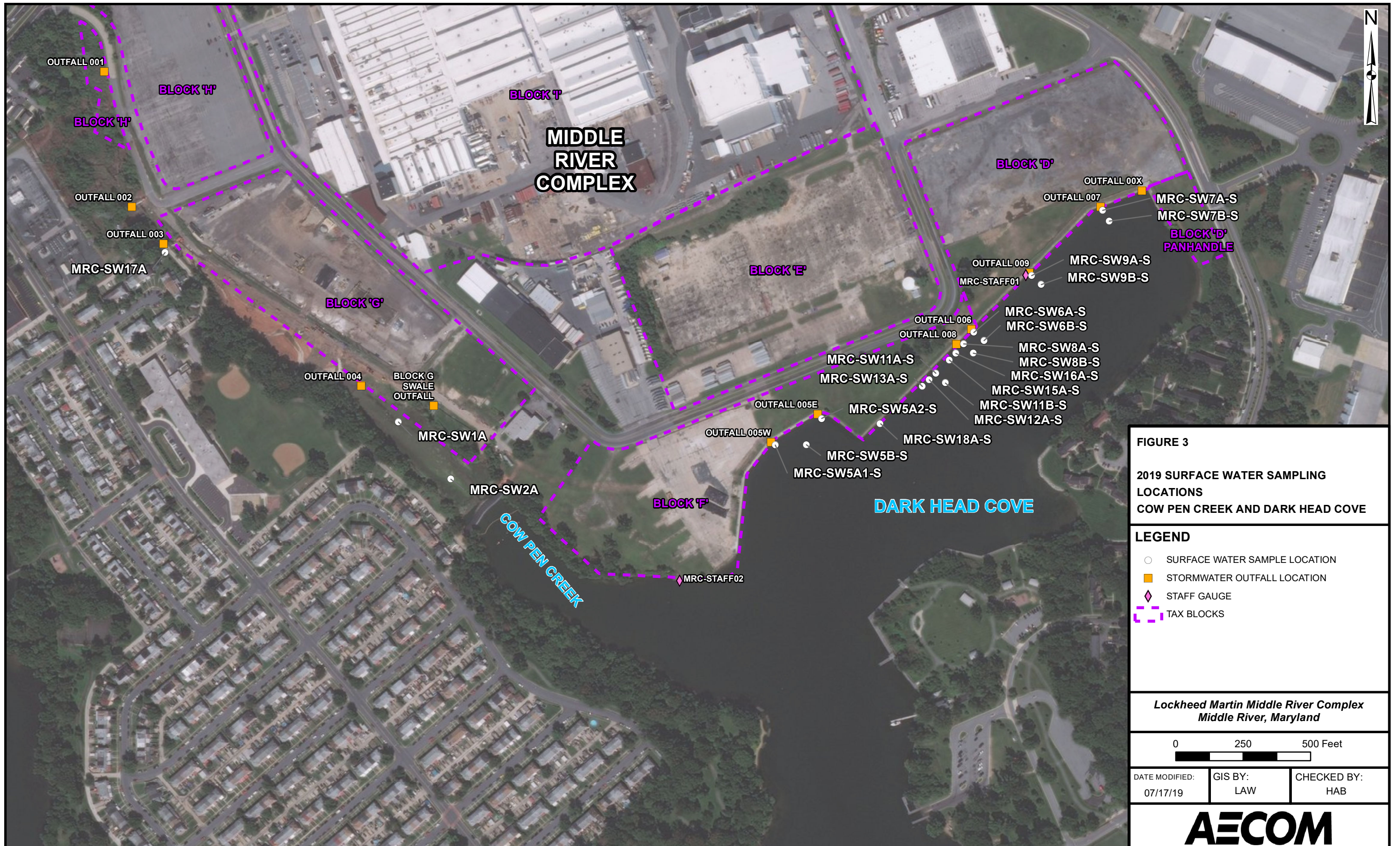
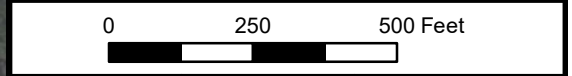


FIGURE 3
2019 SURFACE WATER SAMPLING LOCATIONS
COW PEN CREEK AND DARK HEAD COVE

LEGEND

- SURFACE WATER SAMPLE LOCATION
- STORMWATER OUTFALL LOCATION
- ◆ STAFF GAUGE
- ▭ TAX BLOCKS

*Lockheed Martin Middle River Complex
 Middle River, Maryland*



DATE MODIFIED: 07/17/19	GIS BY: LAW	CHECKED BY: HAB
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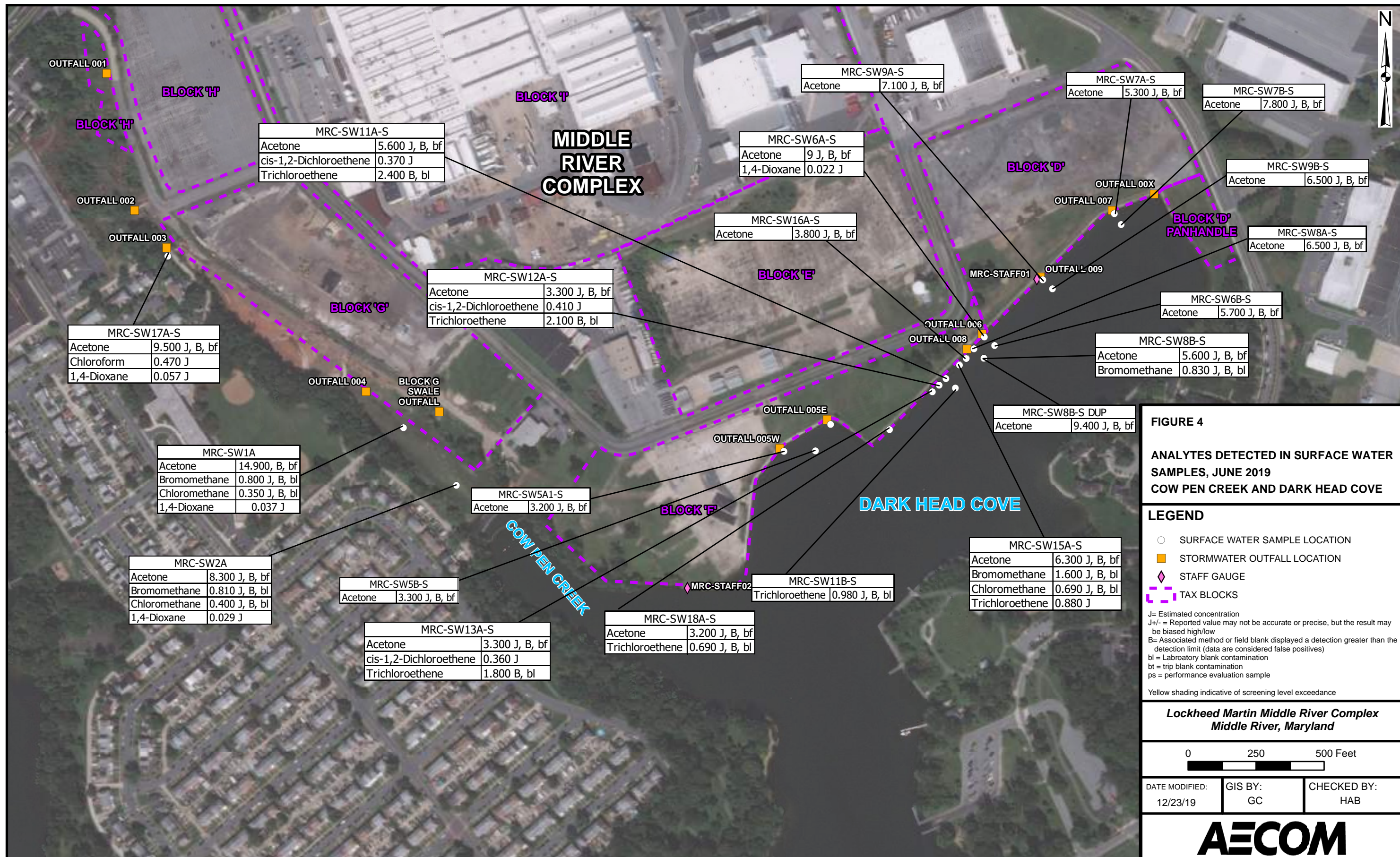


FIGURE 4
ANALYTES DETECTED IN SURFACE WATER SAMPLES, JUNE 2019
COW PEN CREEK AND DARK HEAD COVE

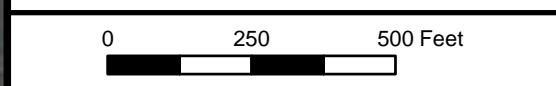
LEGEND

- SURFACE WATER SAMPLE LOCATION
- STORMWATER OUTFALL LOCATION
- ◆ STAFF GAUGE
- TAX BLOCKS

J= Estimated concentration
 J+/- = Reported value may not be accurate or precise, but the result may be biased high/low
 B= Associated method or field blank displayed a detection greater than the detection limit (data are considered false positives)
 bl = Laboratory blank contamination
 bt = trip blank contamination
 ps = performance evaluation sample

Yellow shading indicative of screening level exceedance

Lockheed Martin Middle River Complex
Middle River, Maryland



DATE MODIFIED: 12/23/19	GIS BY: GC	CHECKED BY: HAB
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TABLES

Table 1 2019 Surface Water Sampling Locations and Chemical Analyses

Table 2 Detected Analytes and Screening-Level Exceedances in June 2019 Surface Water Samples

Table 3 June 2019 Field Measurements for Surface Water Quality

TABLE 1

**Surface Water Sampling Locations and
Chemical Analyses, 2019 Only
Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
Page 1 of 1**

Sample location	Sample number	Distance from shore (in feet)	Samples per round	Analytical parameters (all samples)
<i>Dark Head Cove</i>				
Outfall 005E and 005W	MRC-SW5A1-S	10	1	VOCs, PCBs**
	MRC-SW5A2-S	10	1	field parameters
	MRC-SW5B-S	50	1	
Outfall 006	MRC-SW6A-S	10	1	VOCs, 1,4 Dioxane, PCBs**
	MRC-SW6B-S	50	1	field parameters
Outfall 007	MRC-SW7A-S	10	1	VOCs, PCBs**
	MRC-SW7B-S	50	1	field parameters
Outfall 008	MRC-SW8A-S	10	1	VOCs, 1,4 Dioxane, PCBs**
	MRC-SW8B-S	50	1	field parameters
Outfall 009	MRC-SW9A-S	10	1	VOCs, PCBs**
	MRC-SW9B-S	50	1	field parameters
Dark Head Cove	MRC-SW11A-S	10	1	VOCs, PCBs**
	MRC-SW11B-S	50	1	
	MRC-SW12A-S	10	1	
	MRC-SW13A-S	10	1	
	MRC-SW15A-S	10	1	field parameters
	MRC-SW16A-S	10	1	
	MRC-SW18A-S	10	1	
<i>Cow Pen Creek</i>				
Outfall 003	MRC-SW17A	downstream*	1	VOCs, 1,4-dioxane
Near western plume	MRC-SW1A	upstream*	1	
	MRC-SW2A	downstream*	1	

Notes:

Samples are to be collected in April, June and September each year

* Samples will be collected from the creek's centerline, 10 feet upstream (northwest) and 10 feet downstream (southeast) from the estimated groundwater plume boundaries

** PCB samples will be collected only in the April round, each year

All samples are to be collected one foot below the water surface

VOCs – volatile organic compounds by USEPA SW-846 Method 8260C

MRC - Middle River Complex

PCBs – polychlorinated biphenyl homologs by USEPA SW-846 Method 680

SW - Surface Water

1,4-Dioxane by USEPA SW-848270D SIM

USEPA – United States Environmental Protection Agency

Field parameters include pH, temperature, specific conductance, dissolved oxygen (DO), hardness, turbidity,

oxidation-reduction potential (ORP), and salinity using calibrated portable field instruments (Horiba U-10 or equivalent) at the

Hardness analyses will require use of a field test kit (Hach, Chemetrics, or equivalent).

One trip blank shall be used and shipped for each cooler containing VOC samples.

Field duplicates will be collected and analyzed for each laboratory analytical parameter (i.e., VOCs, PCBs, 1,4-dioxane) at a rat

Table 2
Detected Analytes and Screening Level Exceedances in June 2019 Surface Water Samples
Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
Page 1 of 5

Analyte	CAS Number	Ecological		Human Health		MRC-SW1A		MRC-SW2A		MRC-SW5A1-S		MRC-SW5A2-S		MRC-SW5B-S										
		Federal Benchmarks (1)		Regional Benchmarks (2)		Human Health Consumption (Organism Only)		Field Sample		Field Sample		Field Sample		Field Sample										
		Acute	Chronic	Federal (3,4)	State (5)	Swimming Screening Levels (6)	LQ	VQ	RC	LQ	VQ	RC	LQ	VQ	RC	LQ	VQ	RC						
VOLATILES (µg/L)																								
Acetone	67-64-1	NE	NE	1500	NE	NE	14,900	B	bf	8,300	J	B	bf	3,200	J	B	bf	3,300	J	B	bf			
Bromomethane	74-83-9	NE	NE	16	1500	10000	0,800	J	B	bf	0,810	J	B	bf	ND	U	ND	ND	ND	U	ND	U		
Chloroform	67-66-3	NE	NE	1.8	2000	4700	ND	U	ND	U	ND	U	ND	U	ND	U	ND	ND	U	ND	U	ND	U	
Chloromethane	74-87-3	NE	NE	NE	NE	NE	0,350	J	B	bf	0,400	J	B	bf	ND	U	ND	ND	U	ND	U	ND	U	
cis-1,2-Dichloroethene	156-59-2	NE	NE	590	NE	NE	ND	U	ND	U	ND	U	ND	U	ND	U	ND	ND	U	ND	U	ND	U	
Trichloroethene	79-01-6	NE	NE	21	70	300	ND	U	ND	U	ND	U	ND	U	ND	U	ND	ND	U	ND	U	ND	U	
SEMIVOLATILES (µg/L)																								
1,4-Dioxane	123-91-1	NE	NE	22000	NE	NE	0,037	J			0,029	J			NS			NS						

Bold values indicate detections

References

- 1 United States Environmental Protection Agency's (USEPA's) National Recommended Aquatic Life Criteria <http://www.epa.gov/wqc/national-recommended-aquatic-life-criteria-aquatic-life-criteria-table>
- 2 United States Environmental Protection Agency (USEPA) Region 3 Biological Technical Advisory Group (BTAG) Freshwater Screening Benchmarks (USEPA, 2006). Value for 1,4-dioxane is the USEPA Region 5 ecological screening level (USEPA, 2003). Value for bromomethane is the USEPA Region 4 ecological screening value (USEPA, 2018).
- 3 National Recommended Water Quality Criteria, <http://water.epa.gov/scitech/sguidance/standards/current/index.cfm>
- 4 For carcinogens (i.e. trichloroethene), criterion is for incremental cancer risk of 1 x 10⁻⁵
- 5 Maryland Numerical Criteria for Toxic Substances in Surface Waters, Code of Maryland Regulations (COMAR) 26.08.02.03, <http://www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-2.htm>
- 6 Site-specific swimming screening levels were developed for trichloroethene, cis-1,2-dichloroethene, and 1,4 dioxane for Dark Head Cove.

Definitions

- LQ - Laboratory Qualifier
- MRC - Middle River Complex
- ND - not detected
- NE - not established
- NS - not sampled
- RC - Reason Code
- SW - surface water
- VQ - Data Validation Qualifier
- µg/L - micrograms per liter

Data Qualifiers and Reason Codes

- J = Estimated concentration
- J+ = Reported value may not be accurate or precise, but the result may be biased high.
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- s = Surrogate percent recovery anomaly

Table 2
Detected Analytes and Screening Level Exceedances in June 2019 Surface Water Samples
Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
Page 2 of 5

Analyte	CAS Number	Ecological		Human Health		MRC-SW6A-S		MRC-SW6B-S		MRC-SW7A-S		MRC-SW7B-S		MRC-SW8A-S												
		Federal Benchmarks (1)		Regional Benchmarks (2)		Human Health Consumption (Organism Only)		Swimming Screening Levels (6)		Field Sample		Field Sample		Field Sample		Field Sample										
		Acute	Chronic	Federal (3,4)	State (5)	Federal (6)	State (6)	LQ	VQ	RC	Result	LQ	VQ	RC	Result	LQ	VQ	RC	Result							
VOLATILES (µg/L)																										
Acetone	67-64-1	NE	NE	1500	NE	NE	NE	9,000	J	B	bf	5,300	J	B	bf	7,800	J	B	bf	6,500	J	B	bf			
Bromomethane	74-83-9	NE	NE	16	10000	1500	NE	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	U		
Chloroform	67-66-3	NE	NE	1.8	2000	4700	NE	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	U		
Chloromethane	74-87-3	NE	NE	NE	NE	NE	NE	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	U		
cis-1,2-Dichloroethene	156-59-2	NE	NE	590	NE	NE	20	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	U		
Trichloroethene	79-01-6	NE	NE	21	70	300	30	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	ND	U	U	ND	U		
SEMI-VOLATILES (µg/L)																										
1,4-Dioxane	123-91-1	NE	NE	22000	NE	NE	20	0.022	J	U	NS	NS	U	U	NS	NS	U	U	NS	NS	U	U	NS	NS	U	U

Bold values indicate detections

References

- 1 United States Environmental Protection Agency's (USEPA's) National Recommended Aquatic Life Criteria <http://www.epa.gov/wqc/national-recommended-aquatic-life-criteria-aquatic-life-criteria-table>
- 2 United States Environmental Protection Agency (USEPA) Region 3 Biological Technical Advisory Group (BTAG) Freshwater Screening Benchmarks (USEPA, 2006). Value for 1,4-dioxane is the USEPA Region 5 ecological screening level (USEPA, 2003). Value for bromomethane is the USEPA Region 4 ecological screening value (USEPA, 2018).
- 3 National Recommended Water Quality Criteria, <http://water.epa.gov/scitech/sguidance/standards/current/index.cfm>
- 4 For carcinogens (i.e. trichloroethene), criterion is for incremental cancer risk of 1 x 10⁻⁵
- 5 Maryland Numerical Criteria for Toxic Substances in Surface Waters, Code of Maryland Regulations (COMAR) 26.08.02.03, <http://www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-2.htm>
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Table 2
Detected Analytes and Screening Level Exceedances in June 2019 Surface Water Samples
Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
Page 3 of 5

Analyte	CAS Number	Ecological		Human Health		MRC-SW8B-S		MRC-SW8B-S		MRC-SW9A-S		MRC-SW9B-S		MRC-SW11A-S					
		Federal Benchmarks (1)		Regional Benchmarks (2)		Human Health Consumption (Organism Only)		Swimming Screening Levels (6)		Field Sample		Field Duplicate		Field Sample		Field Sample			
		Acute	Chronic	Federal (3,4)	State (5)	Result	LQ/VQ	RC	Result	LQ/VQ	RC	Result	LQ/VQ	RC	Result	LQ/VQ	RC		
VOLATILES (µg/L)																			
Acetone	67-64-1	NE	NE	1500	NE	NE	NE	5.600	J	B	bf	9.400	J	B	bf	5.600	J	B	bf
Bromomethane	74-83-9	NE	NE	16	10000	1500	NE	0.830	J	B	bl	ND	U	U	ND	U	U	U	U
Chloroform	67-66-3	NE	NE	1.8	2000	4700	NE	ND	U	U	U	ND	U	U	ND	U	U	U	U
Chloromethane	74-87-3	NE	NE	NE	NE	NE	NE	ND	U	U	U	ND	U	U	ND	U	U	U	U
cis-1,2-Dichloroethene	156-59-2	NE	NE	590	NE	NE	20	ND	U	U	U	ND	U	U	ND	U	U	U	U
Trichloroethene	79-01-6	NE	NE	21	70	300	30	ND	U	U	U	ND	U	U	ND	U	U	U	U
SEMI-VOLATILES (µg/L)																			
1,4-Dioxane	123-91-1	NE	NE	22000	NE	NE	20	ND	U	U	U	ND	U	U	U	NS	U	U	U

Bold values indicate detections

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- 3 National Recommended Water Quality Criteria, <http://water.epa.gov/scitech/sguidance/standards/current/index.cfm>
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**Table 2
 Detected Analytes and Screening Level Exceedances in June 2019 Surface Water Samples
 Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
 Page 4 of 5**

Analyte	CAS Number	Ecological			Human Health			MRC-SW11B-S		MRC-SW12A-S		MRC-SW13A-S		MRC-SW15A-S		MRC-SW16A-S					
		Federal	Chronic	Regional	Human Health Consumption (Organism Only)	Swimming Screening Levels (6)	Field Sample	Result	LQ	VQ	RC	Field Sample	Result	LQ	VQ	RC	Field Sample	Result	LQ	VQ	RC
VOLATILES (µg/L)																					
Acetone	67-64-1	NE	NE	1500	NE	NE	NE	ND	U	3.300	J	B	bf	6.300	J	B	bf	3.800	J	B	bf
Bromomethane	74-83-9	NE	NE	16	10000	1500	NE	ND	U	ND	U	ND	U	1.600	J	B	bl	ND	U	ND	U
Chloroform	67-66-3	NE	NE	1.8	2000	4700	NE	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloromethane	74-87-3	NE	NE	NE	NE	NE	NE	ND	U	ND	U	ND	U	0.690	J	B	bl	ND	U	ND	U
cis-1,2-Dichloroethene	156-59-2	NE	NE	590	NE	NE	NE	ND	U	0.410	J	ND	U	ND	U	ND	U	ND	U	ND	U
Trichloroethene	79-01-6	NE	NE	21	70	300	NE	0.980	J	B	bl	2.100	B	bl	1.800	J	bl	0.880	J	ND	U
SEMIVOLATILES (µg/L)																					
1,4-Dioxane	123-91-1	NE	NE	22000	NE	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Bold values indicate detections

References

- United States Environmental Protection Agency's (USEPA's) National Recommended Aquatic Life Criteria <http://www.epa.gov/wqc/national-recommended-aquatic-life-criteria-aquatic-life-criteria-table>
- United States Environmental Protection Agency (USEPA) Region 3 Biological Technical Advisory Group (BTAG) Freshwater Screening Benchmarks (USEPA, 2006). Value for 1,4-dioxane is the USEPA Region 5 ecological screening level (USEPA, 2003).
 Value for bromomethane is the USEPA Region 4 ecological screening value (USEPA, 2018).
- National Recommended Water Quality Criteria, <http://water.epa.gov/scitech/sguidance/standards/current/index.cfm>
- For carcinogens (i.e. trichloroethene), criterion is for incremental cancer risk of 1×10^{-5}
- Maryland Numerical Criteria for Toxic Substances in Surface Waters, Code of Maryland Regulations (COMAR) 26.08.02.03, <http://www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-2.htm>
- Site-specific swimming screening levels were developed for trichloroethene, cis-1,2-dichloroethene, and 1,4 dioxane for Dark Head Cove.

Definitions

- LQ - Laboratory Qualifier
- MRC - Middle River Complex
- ND - not detected
- NE - not established
- NS - not sampled
- RC - Reason Code
- SW - surface water
- VQ - Data Validation Qualifier
- µg/L - micrograms per liter

Data Qualifiers and Reason Codes

- J = Estimated concentration
- J+ = Reported value may not be accurate or precise, but the result may be biased high.
- B = The associated method blank or field blank displayed a detection greater than the DL. The reported result value is unchanged and did not require further qualification by data reviewers
- bl = Laboratory blank contamination
- bf = Field or Trip blank contamination
- s = Surrogate percent recovery anomaly

Table 2
Detected Analytes and Screening Level Exceedances in June 2019 Surface Water Samples
Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
Page 5 of 5

Analyte	CAS Number	Ecological		Human Health		MRC-SW17A-S 6/12/2019 Field Sample	MRC-SW18A-S 6/12/2019 Field Sample								
		Federal Benchmarks (1)	Regional Benchmarks (2)	Human Health Consumption (Organism Only)	Swimming Screening Levels (6)										
								Acute	Chronic	Federal (3,4)	State (5)	Result	LQ VQ RC Result	LQ VQ RC	
VOLATILES (µg/L)															
Acetone	67-64-1	NE	NE	1500	NE	NE	NE	9.500	J	B	bf	3.200	J	B	bf
Bromomethane	74-83-9	NE	NE	16	10000	1500	NE	ND	U	ND	U	ND	U	ND	U
Chloroform	67-66-3	NE	NE	1.8	2000	4700	NE	0.470	J	ND	U	ND	U	ND	U
Chloromethane	74-87-3	NE	NE	NE	NE	NE	NE	ND	U	ND	U	ND	U	ND	U
cis-1,2-Dichloroethene	156-59-2	NE	NE	590	NE	NE	20	ND	U	ND	U	ND	U	ND	U
Trichloroethene	79-01-6	NE	NE	21	70	300	30	ND	U	ND	U	0.690	J	B	bl
SEMI-VOLATILES (µg/L)															
1,4-Dioxane	123-91-1	NE	NE	22000	NE	NE	20	0.057	J	NS					

Bold values indicate detections

References

- 1 United States Environmental Protection Agency's (USEPA's) National Recommended Aquatic Life Criteria <http://www.epa.gov/wqc/national-recommended-aquatic-life-criteria-aquatic-life-criteria-table>
- 2 United States Environmental Protection Agency (USEPA) Region 3 Biological Technical Advisory Group (BTAG) Freshwater Screening Benchmarks (USEPA, 2006). Value for 1,4-dioxane is the USEPA Region 5 ecological screening level (USEPA, 2003).
Value for bromomethane is the USEPA Region 4 ecological screening value (USEPA, 2018).
- 3 National Recommended Water Quality Criteria, <http://water.epa.gov/scitech/sguidance/standards/current/index.cfm>
- 4 For carcinogens (i.e. trichloroethene), criterion is for incremental cancer risk of 1 x 10⁻⁵
- 5 Maryland Numerical Criteria for Toxic Substances in Surface Waters, Code of Maryland Regulations (COMAR) 26.08.02.03, <http://www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-2.htm>
- 6 Site-specific swimming screening levels were developed for trichloroethene, cis-1,2-dichloroethene, and 1,4 dioxane for Dark Head Cove.

Definitions

- LQ - Laboratory Qualifier
- MRC - Middle River Complex
- ND - not detected
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- RC - Reason Code
- SW - surface water
- VQ - Data Validation Qualifier
- µg/L - micrograms per liter

Data Qualifiers and Reason Codes

- J = Estimated concentration
- J+ = Reported value may not be accurate or precise, but the result may be biased high.
- B = The associated method blank or field blank displayed a detection greater than the DL. The reported result value is unchanged and did not require further qualification by data reviewers
- bl = Laboratory blank contamination
- bf = Field or Trip blank contamination
- s = Surrogate percent recovery anomaly

Table 3
Field Measurements for Surface Water Quality, June 2019
Lockheed Martin Corporation, Middle River Complex, Middle River, Maryland
Page 1 of 1

Location	Date	Time	Temp (°C)	pH (s.u.)	Specific Conductance (mS/cm)	Turb (NTU)	DO (mg/L)	ORP (mV)	Salinity (ppt)	Hardness (mg/L CaCO ₃)
MRC-SW1A	6/12/2019	0841	24.58	7.06	0.539	26.1	4.67	169.2	0.3	165.7
MRC-SW2A	6/12/2019	0905	25.17	7.5	0.537	13.3	4.48	178.5	0.3	165.7
MRC-SW5A1-S	6/12/2019	0936	25.87	7.66	0.545	14.2	4.5	172.9	0.3	165.7
MRC-SW5A2-S	6/12/2019	0947	25.90	7.61	0.545	11.3	4.77	171.5	0.3	165.7
MRC-SW5B-S	6/12/2019	1000	25.88	7.75	0.545	9.6	4.55	171.4	0.3	165.7
MRC-SW6A-S	6/12/2019	1320	26.63	8.24	0.551	10.4	4.67	172.1	0.3	165.7
MRC-SW6B-S	6/12/2019	1300	26.40	8.22	0.551	10.9	4.8	170.8	0.3	165.7
MRC-SW7A-S	6/12/2019	1400	27.08	8.23	0.551	9.3	4.71	189.4	0.3	165.7
MRC-SW7B-S	6/12/2019	1410	27.00	8.22	0.551	10.8	4.73	183.1	0.3	165.7
MRC-SW8A-S	6/12/2019	1210	26.07	8.01	0.551	9.5	4.7	185.6	0.3	165.7
MRC-SW8B-S	6/12/2019	1230	26.08	8.01	0.55	10.7	4.35	195.7	0.3	165.7
MRC-SW9A-S	6/12/2019	1350	27.03	8.22	0.551	9.9	4.74	198.4	0.3	165.7
MRC-SW9B-S	6/12/2019	1340	26.71	8.27	0.551	10.4	4.87	175.8	0.3	165.7
MRC-SW11A-S	6/12/2019	1055	25.87	7.71	0.548	9.6	4.51	171.2	0.3	165.7
MRC-SW11B-S	6/12/2019	1103	25.84	7.74	0.547	11.7	4.31	176.8	0.3	165.7
MRC-SW12A-S	6/12/2019	1041	25.85	7.72	0.548	10.6	4.33	168.8	0.3	165.7
MRC-SW13A-S	6/12/2019	1030	25.86	7.78	0.547	10	4.7	169.4	0.3	165.7
MRC-SW15A-S	6/12/2019	1115	25.87	7.77	0.55	10.3	4.39	180.7	0.3	165.7
MRC-SW16A-S	6/12/2019	1150	25.93	7.88	0.55	10.2	4.8	179.4	0.3	165.7
MRC-SW17A	6/12/2019	1500	25.46	8.33	0.51	10	6.54	197.8	0.2	208
MRC-SW18A-S	6/12/2019	1012	25.84	7.77	0.547	10	4.51	181.5	0.3	165.7

Notes:

- Temp - temperature
- (°C) - degrees Celcius
- s.u. - standard units
- mS/cm - milliSiemens per centimeter
- Turb - turbidity
- NTU - nephelometric turbidity unit
- DO - dissolved oxygen
- mg/L - milligrams per liter
- ORP - oxidation reduction potential
- mV - millivolts
- ppt - parts per trillion

APPENDICES

Appendix A—Surface Water Sampling Log Sheets
Appendix B—Data Validation Report
Appendix C—Laboratory Analytical Data

APPENDIX A

Surface Water Sampling Forms



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW1A Project No.: 60555202 Sample Location: MRC-SW1A
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater

Type of Sample:
 Low Concentration
 High Concentration

QA Sample Type: _____

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 0841	clear	7.06	0.539	24.58	26.1	4.67	0.3	169.2
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF02 1525: 0.3 feet 1600: 0.4 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4-dioxane (8270D/SIM)	None	2 - 1 L ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO₃) = 165.7



Circle if Applicable: N/A

MS/MSD	Duplicate ID:
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Signature: *Jou [Signature]*





SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW2A Project No.: 60555202
 Sample Location: MRC-SW2A
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 0905	clear	7.5	0.537	25.17	13.3	4.48	0.3	178.5
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF02 1525: 0.3 feet 1600: 0.4 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4-dioxane (8270D/SIM)	None	2 - 1 L ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO₃) = 165.7



Circle if Applicable: N/A

MS/MSD	Duplicate ID:
--------	---------------

Signature: *Joni [Signature]*





SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW5A1-S Project No.: 60555202 Sample Location: MRC-SW5A1-S
 Sampled By: Victoria Kirkpatrick

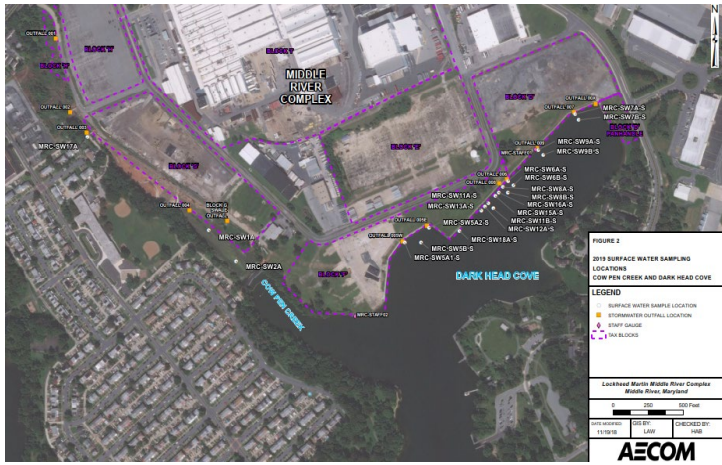
Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 0936	clear	7.66	0.545	25.87	14.2	4.5	0.3	172.9
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO₃) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni [Signature]</i>
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW5A2-S Project No.: 60555202 Sample Location: MRC-SW5A2-S
 Sampled By: Victoria Kirkpatrick
 Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 0947	clear	7.61	0.545	25.9	11.3	4.77	0.3	171.5
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO₃) = 165.7



Circle if Applicable: _____ N/A Signature: *Joni [Signature]*

MS/MSD	Duplicate ID:
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW5B-S Project No.: 60555202 Sample Location: MRC-SW5B-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1000								
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01								
1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni Hea</i>
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW6A-S Project No.: 60555202 Sample Location: MRC-SW6A-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1320								
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4 Dioxane (6020A/7470)	None	2 - 1000 mL ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: N/A Signature: *Joni Hill*

MS/MSD	Duplicate ID:
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW6B-S Project No.: 60555202 Sample Location: MRC-SW6B-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1300	clear	8.22	0.551	26.4	10.9	4.8	0.3	170.8
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4 Dioxane (6020A/7470)	None	2 - 1000 mL ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni Hea</i>
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW7A-S Project No.: 60555202 Sample Location: MRC-SW7A-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1400	clear	8.23	0.551	27.08	9.3	4.71	0.3	189.4
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni Hea</i>
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW7B-S Project No.: 60555202 Sample Location: MRC-SW7B-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1410	clear	8.22	0.551	27	10.8	4.73	0.3	183.1
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO₃) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:
--------	---------------

Signature: *Joni [Signature]*



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW8A-S Project No.: 60555202 Sample Location: MRC-SW8A-S
 Sampled By: Victoria Kirkpatrick

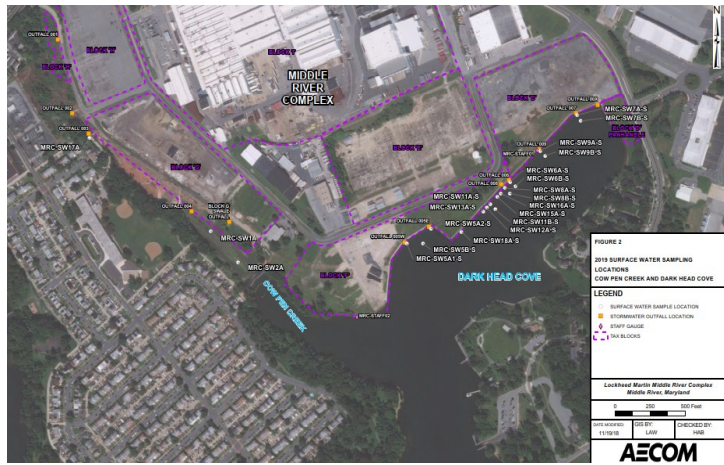
Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1210	clear	8.01	0.551	26.07	9.5	4.7	0.3	185.6
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4 Dioxane (6020A/7470)	None	2 - 1000 mL ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:
--------	---------------

Signature: *Jou K...*



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW8B-S Project No.: 60555202 Sample Location: MRC-SW8B-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1230	clear	8.01	0.55	26.08	10.7	4.35	0.3	195.7
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4 Dioxane (6020A/7470)	None	2 - 1000 mL ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO₃) = 165.7



Circle if Applicable: Yes - Duplicate, MS, and MSD Signature: *Jou Hee*

MS/MSD	Duplicate ID: MRC-SW8B-S DUP
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW9A-S Project No.: 60555202 Sample Location: MRC-SW9A-S
 Sampled By: Victoria Kirkpatrick

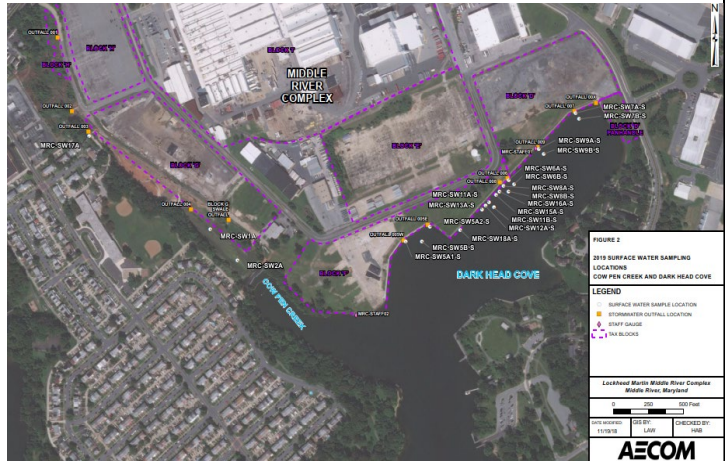
Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1350	clear	8.22	0.551	27.03	9.9	4.74	0.3	198.4
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni Hea</i>
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW9B-S Project No.: 60555202 Sample Location: MRC-SW9B-S
 Sampled By: Victoria Kirkpatrick

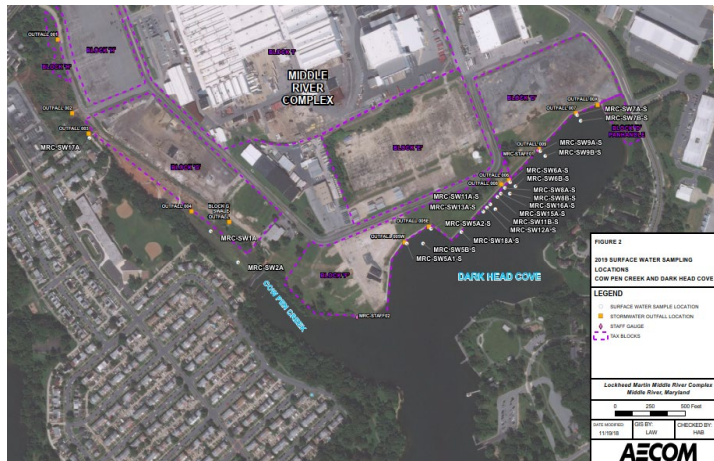
Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1340	clear	8.27	0.551	26.71	10.4	4.87	0.3	175.8
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A Signature: *Joni Hea*

MS/MSD	Duplicate ID:
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SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW11A-S Project No.: 60555202 Sample Location: MRC-SW11A-S
 Sampled By: Victoria Kirkpatrick

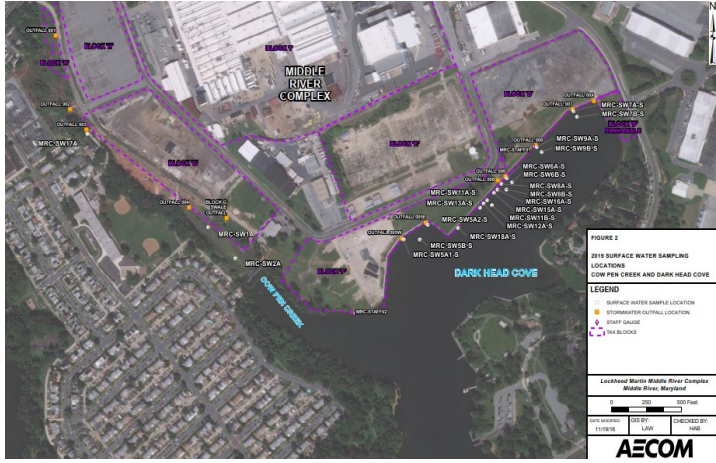
Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1325	clear	7.71	0.548	25.87	9.6	4.51	0.3	171.2
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A Signature: *Joni Hea*

MS/MSD	Duplicate ID:
--------	---------------



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW11B-S Project No.: 60555202 Sample Location: MRC-SW11B-S Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1103	clear	7.74	0.547	25.84	11.7	4.31	0.3	176.8
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni Hea</i>
--------	---------------	----------------------------



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW12A-S Project No.: 60555202 Sample Location: MRC-SW12A-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1041	clear	7.72	0.548	25.85	10.6	4.33	0.3	168.8
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:	Signature: <i>Joni Hea</i>
--------	---------------	----------------------------



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW13A-S Project No.: 60555202 Sample Location: MRC-SW13A-S
 Sampled By: Victoria Kirkpatrick

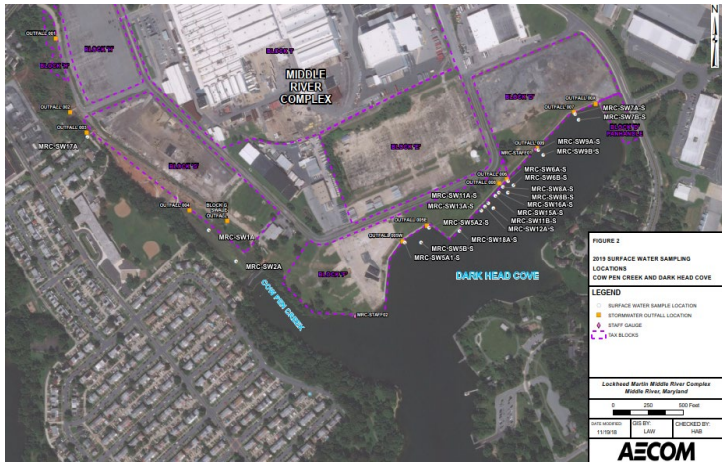
Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1030	clear	7.78	0.547	25.86	10	4.7	0.3	169.4
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD _____ Duplicate ID: _____

Signature: *Joni Hea*



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW15A-S Project No.: 60555202 Sample Location: MRC-SW15A-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1115	clear	7.77	0.55	25.87	10.3	4.39	0.3	180.7
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable:	N/A	Signature: <i>Joni Hea</i>
MS/MSD	Duplicate ID:	



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW16A-S Project No.: 60555202 Sample Location: MRC-SW16A-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1150	clear	7.88	0.55	25.93	10.2	4.8	0.3	179.4
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF01 1105: 0.0 feet 1500: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes

OBSERVATIONS / NOTES: _____ MAP: _____

Hardness (mg/L CaCO3) = 165.7



Circle if Applicable: _____ N/A

MS/MSD	Duplicate ID:
--------	---------------

Signature: *Joni Hill*



SURFACE WATER SAMPLE LOG SHEET

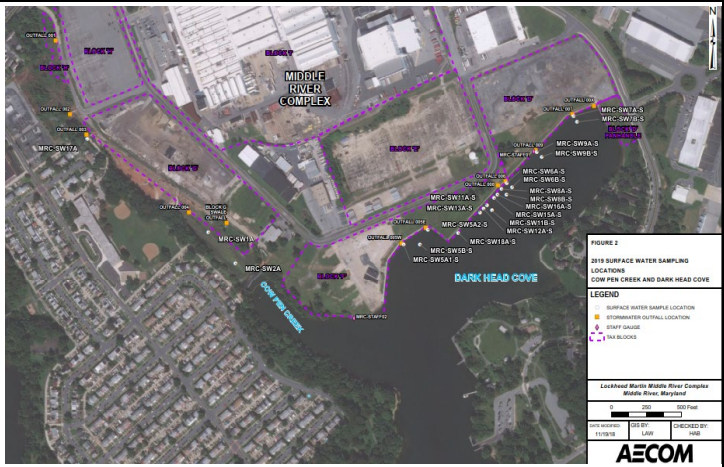
Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW17A Project No.: 60555202 Sample Location: MRC-SW17A
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1500	clear	8.33	0.51	25.46	0	6.54	0.2	197.8
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF02 1525: -0.4 feet 1600: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4-dioxane (8270D/SIM)	None	2 - 1 L ambers	Yes
OBSERVATIONS / NOTES:		MAP:	

Hardness (mg/L CaCO3) = 208



Circle if Applicable: _____ N/A

MS/MSD: _____ Duplicate ID: _____

Signature: *Joni Hea*



SURFACE WATER SAMPLE LOG SHEET

Project Site Name: Lockheed Martin Corporation Middle River Complex Sample ID No.: MRC-SW18A-S Project No.: 60555202 Sample Location: MRC-SW18A-S
 Sampled By: Victoria Kirkpatrick

Domestic Well Data
 Monitoring Well Data
 Other: Tidal Creek - Freshwater Type of Sample: Low Concentration
 QA Sample Type: _____ High Concentration

SAMPLING DATA:								
Date: 06/12/2019	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	ORP (mV)
Time: 1012								
Method: Grab Sample								
Depth: 1 ft below water surface								
Static Water Level: MRC-STAFF02								
1525: -0.4 feet 1600: 0.3 feet								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs (8260C)	HCl	2 - 40 mL glass vials	Yes
1,4-dioxane (8270D/SIM)	None	2 - 1 L ambers	Yes

OBSERVATIONS / NOTES: _____ MAP: _____



Circle if Applicable: _____ N/A

MS/MSD: _____ Duplicate ID: _____

Signature: *Joni Hea*

APPENDIX B

Data Validation Report

Data Validation and Usability Report

June 2019 – Triannual Surface Water Sampling

Lockheed Martin Corporation
Middle River Complex
Middle River, Maryland

August 2019

IDENTIFICATION FORM

Data Validation and Data Usability Review



Zachary Neigh
Data Validator
AECOM
08/08/2019



Naoum Tavantzis
Project Chemist
AECOM
08/08/2019

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I. Executive Summary

AECOM performed data validation on 100% of the surface water field investigative samples collected on June 12th, 2019 at the Lockheed Martin Middle River Complex located in Middle River, Maryland. The validation was performed to a United States Environmental Protection Agency (USEPA) Region III Inorganic Level I and Organic Level I based on the specifics of the analytical methods referenced and qualified according to the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic/Inorganic (January 2017) Superfund Data Review, with the exception of blank detections which were qualified according to the USEPA Region III modifications to the National Functional Guidelines defining the use of the “B” flag.

The review was assisted through the use of an electronic data management tool that compiles batch-level quality control (QC) data submitted with the laboratory deliverables and identifies anomalies for verification and qualification by the data reviewer. This information is provided in the form of a structured workbook that includes field sample analytical results, QC sample results, batch associations, and QC criteria. Prior to validation, the quality assurance procedures applied to the process itself consist of reviewing the output for data completeness based on laboratory deliverables and chain of custody reports; verification of QC criteria based on the aforementioned data validation guidelines and project-specific Quality Assurance Project Plan (QAPP); and strict control of data management permissions. The resulting data validation workbooks were evaluated and validated using the AECOM automated validation assistant (AVA) tool. The specific data elements that were reviewed include:

- Holding times and sample preservation
- Blanks (Method, Trip, Field, and Equipment)
- Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
- Surrogate spike results
- Field duplicates
- Laboratory duplicates
- Sensitivity

Data validation qualifiers were applied to results where a QC nonconformance required qualification per USEPA guidance. All QC anomalies were assessed for their impact on data quality in regards to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) as discussed in **II: PARCCS Data Quality**. A detailed list of the QC non-conformances can be found in **III: Data Validation Findings**. The associated field sample results that required qualification are listed in **IV: Qualified Field Sample Results**.

II. PARCCS Data Quality

Precision

Precision is the degree of agreement among repeated measurements of the same characteristic on the same sample or on separate samples collected as close as possible in time and place. Field sampling precision is measured using the field duplicate relative percent differences; laboratory precision is measured using laboratory duplicate relative percent differences (RPD) and/or laboratory control spike and matrix spike duplicate relative percent differences.

The MS/MSD performed on field sample MRC-SW8B-S-061219 and MRC-SW15A-S-061219 displayed several RPD greater than the upper QC limits. The positive associated parent sample result was previously qualified due to a method blank detection; no further data qualifying action was taken.

Accuracy

Accuracy is a measure of confidence in a measurement. The smaller the difference between the measurement of a parameter and its "true" or expected value, the more accurate the measurement. Analytical accuracy was assessed through the measurement of percent recoveries in the surrogate spikes, laboratory control spike pairs (LCS/LCSD) and the matrix spike pairs (MS/MSD).

Several LCS displayed percent recoveries outside the QC limits. The field sample results associated with percent recoveries greater than the upper QC limits were non-detect; no data qualifying action was required. The field sample result associated with the percent recovery less than the lower QC limit was non-detect and was qualified UJ,l. These anomalies are considered minor, and the qualified field sample result should be considered usable as an estimated value with a negative bias.

The MS/MSD performed on field sample MRC-SW8B-S-061219 and MRC-SW15A-S-061219 displayed percent recoveries less than the lower QC limits for bromomethane and 2-chlorovinylether. The positive associated field sample result was previously qualified due to a method blank detection; no further data qualifying action was taken. The associated non-detect field sample results were qualified UJ,m. These anomalies are considered minor and the qualified field sample results should be considered usable as estimated values with a negative bias.

Representativeness

Representativeness qualitatively expresses the degree to which data accurately reflect site conditions. Factors that affect the representativeness of analytical data include appropriate sample population definitions, proper sample collection and preservation techniques, analytical holding times, use of standard analytical methods, and determination of matrix or analyte interferences. Representativeness is also monitored using negative controls such as trip blanks, field blanks, and equipment blanks, along with adherence to the standard operating procedures and sampling plans.

Method blanks were prepared at a frequency of one per laboratory batch along with a collected field blank as negative controls to assess data quality. The laboratory did not provide trip blanks, so a field blank was prepared during sample collection in place of trip blanks. In six instances, method blanks displayed detections greater than the method detection limits. The affected analytes included bromomethane, chloromethane, and trichloroethene. The positive associated field sample results and field blank results that were within five times the method blank concentrations were qualified B, bl. The qualified field sample results should be considered potential false positives. The field blank, FB-061319, displayed detections for acetone and bromomethane greater than the method detection limit. The detection for bromomethane was associated with a method blank detection of the same analyte. Therefore, the field blank detection of bromomethane was not used to qualify field sample results. The positive field sample results that were associated with the remaining field blank detection and within five times the field blank concentration were qualified B,bf, unless previously qualified due to a method blank detection. The qualified field sample results should be considered potential false positives

Comparability

Comparability is the extent to which data from one study can be compared directly to either past data from the current project or data from another study. Using standardized sampling and analytical methods, units of reporting, and site selection procedures helps ensure comparability. Standard field sampling methods and current CLP analytical methods by an accredited laboratory were used in this investigation.

Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount of data expected under normal conditions. It is expected that laboratories will provide data meeting system quality control acceptance criteria for all samples tested. Project completeness is determined by evaluating the planned versus actual quantities of usable data. A total of 23 field samples were validated, including 21 investigative surface water samples, one field duplicate, and one field blank. All data are usable, as qualified, for their intended purpose based on the data reviewed.

Sensitivity

Sensitivity reflects the ability of the analytical method to detect analytes of interest below the level of concern. This goal is achieved by identifying the level of concern, choosing a method with appropriate method detection limits, and ensuring that the laboratory analyzes calibration standards at or below the level of concern. The laboratory was able to achieve the lowest reporting limits based on the analytical methods employed and the variety of matrices encountered. No field sample results were reported from dilutions. Any analytes detected below the reporting limit and above the method detection limit were reported and qualified "J" as estimated values by the laboratory.

Overall Impact on Data Usability

Overall data usability met the completeness requirement outlined in the QAPP at 100%. During the course of the data validation, several minor anomalies were noted which is to be anticipated based on statistical predictability of standard analytical procedures. Several field sample results were qualified due to these minor anomalies. All data are considered usable as qualified, for their intended purpose based on the data reviewed.

III. Data Validation Findings

Volatile Organic Compounds

SW846-8260B

Description	Sample ID	Analyte	Value (Control Limit)
Holding Times	No Anomalies		
Method Blanks	2966475	Bromomethane	1.8 ug/l (0.39 ug/l)
		Chloromethane	0.77 ug/l (0.31 ug/l)
	2966920	Bromomethane	0.77 ug/l (0.39 ug/l)
		Chloromethane	0.42 ug/l (0.31 ug/l)
	2968376	Trichloroethene	0.62 ug/l (0.33 ug/l)
Field Blanks	FB-061319	Bromomethane	0.72 ug/l (0.39 ug/l)
		Acetone	3.9 ug/L (3.1 ug/L)
		Bromomethane	0.63 ug/L (0.39)
LCS/LCSD	2966476	N-Propylbenzene	137% (74-122%)
		Methylene Chloride	136% (76-121%)
		Bromoform	145% (70-123%)
	2966921	N-Propylbenzene	131% (74-122%)
		4-Methyl-2-Pentanone	70.5% (71-146%)
MS/MSD	MRC-SW8B-S-061219	Bromoform	127% (70-123%)
		2,2-Dichloropropane	134% (64-129%)
	MRC-SW15A-S-061219	2-Chloroethylvinylether	0.59% (1-150%)
		Bromomethane	37.1% (45-148%)
RPD	MRC-SW8B-S-061219	2-Chloroethylvinylether	0% (1-150%)
RPD	MRC-SW8B-S-061219	Bromomethane	44% (26%)
Surrogate Spike	No Anomalies		
Laboratory Duplicates	No Anomalies		
Field Duplicates	No Anomalies		

1,4-Dioxane

SW846-8270D-SIM

Description	Sample ID	Analyte	Value (Control Limit)
Holding Times	No Anomalies		
Method Blanks	No Anomalies		
Field/Equipment Blanks	No Anomalies		
LCS/LCSD	No Anomalies		
MS/MSD	No Anomalies		
Surrogate Spike	No Anomalies		
Laboratory Duplicates	No Anomalies		
Field Duplicates	No Anomalies		

IV. Qualified Field Sample Results

Field Sample ID	Analytical Method	Analyte	Result	Units	Qualifier	Reason Code
FB-061319	SW8260B	Bromomethane	0.63	ug/l	B	bl
MRC-SW11A-S-061219	SW8260B	Acetone	5.6	ug/l	B	bf
MRC-SW11A-S-061219	SW8260B	TRICHLOROETHENE	2.4	ug/l	B	bl
MRC-SW11B-S-061219	SW8260B	TRICHLOROETHENE	0.98	ug/l	B	bl
MRC-SW12A-S-061219	SW8260B	Acetone	3.3	ug/l	B	bf
MRC-SW12A-S-061219	SW8260B	TRICHLOROETHENE	2.1	ug/l	B	bl
MRC-SW13A-S-061219	SW8260B	Acetone	3.3	ug/l	B	bf
MRC-SW13A-S-061219	SW8260B	TRICHLOROETHENE	1.8	ug/l	B	bl
MRC-SW15A-S-061219	SW8260B	2-Chloroethylvinylether	2.0	ug/l	UJ	m
MRC-SW15A-S-061219	SW8260B	Acetone	6.3	ug/l	B	bf
MRC-SW15A-S-061219	SW8260B	Bromomethane	1.6	ug/l	B	bl
MRC-SW15A-S-061219	SW8260B	Chloromethane	0.69	ug/l	B	bl
MRC-SW16A-S-061219	SW8260B	Acetone	3.8	ug/l	B	bf
MRC-SW17A-S-061219	SW8260B	Acetone	9.5	ug/l	B	bf
MRC-SW18A-S-061219	SW8260B	Acetone	3.2	ug/l	B	bf
MRC-SW18A-S-061219	SW8260B	TRICHLOROETHENE	0.69	ug/l	B	bl
MRC-SW1A-061219	SW8260B	4-Methyl-2-Pentanone	5.0	ug/l	UJ	l
MRC-SW1A-061219	SW8260B	Acetone	14.9	ug/l	B	bf
MRC-SW1A-061219	SW8260B	Bromomethane	0.80	ug/l	B	bl
MRC-SW1A-061219	SW8260B	Chloromethane	0.35	ug/l	B	bl
MRC-SW2A-061219	SW8260B	4-Methyl-2-Pentanone	5.0	ug/l	UJ	l
MRC-SW2A-061219	SW8260B	Acetone	8.3	ug/l	B	bf
MRC-SW2A-061219	SW8260B	Bromomethane	0.81	ug/l	B	bl
MRC-SW2A-061219	SW8260B	Chloromethane	0.40	ug/l	B	bl
MRC-SW5A1-S-061219	SW8260B	Acetone	3.2	ug/l	B	bf
MRC-SW5B-S-061219	SW8260B	Acetone	3.3	ug/l	B	bf
MRC-SW6A-S-061219	SW8260B	Acetone	9.0	ug/l	B	bf
MRC-SW6B-S-061219	SW8260B	Acetone	5.7	ug/l	B	bf
MRC-SW7A-S-061219	SW8260B	Acetone	5.3	ug/l	B	bf
MRC-SW7B-S-061219	SW8260B	Acetone	7.8	ug/l	B	bf
MRC-SW8A-S-061219	SW8260B	Acetone	6.5	ug/l	B	bf
MRC-SW8B-S-061219	SW8260B	2-Chloroethylvinylether	2.0	ug/l	UJ	m
MRC-SW8B-S-061219	SW8260B	Acetone	5.6	ug/l	B	bf
MRC-SW8B-S-061219	SW8260B	Bromomethane	0.83	ug/l	B	bl

Field Sample ID	Analytical Method	Analyte	Result	Units	Qualifier	Reason Code
MRC-SW8B-S-DUP-061219	SW8260B	Acetone	9.4	ug/l	B	bf
MRC-SW9A-S-061219	SW8260B	Acetone	7.1	ug/l	B	bf
MRC-SW9B-S-S061219	SW8260B	Acetone	6.5	ug/l	B	bf

Appendix A
Data Validation Qualifiers and Reason Codes

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision-making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the USEPA Contract Laboratory Program National Functional Guidelines for Organic (August 2014) Data Review and the USEPA Region III Guidelines for Organic (September 1994) for blank qualifications only.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
B	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted Detection Limit (DL) for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the Limit of Detection (LOD)).
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by gas Chromatograph/Mass Spectrometer (GC/MS)
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

The other type of code used by AECOM is a “Reason Code”. The reason code indicates the type of quality control failure that led to the application of the data validation flag.

Reason Codes

Code	Description	Code	Description
a	Tracer recovery (radiochemical data only)	ld	Laboratory duplicate RPDs (matrix duplicate, MSD, LCSD)
be	Equipment blank contamination	lp	Laboratory control sample/laboratory control sample duplicate RPDs
bf	Field blank contamination	m	Matrix spike recovery
bi	Bias indeterminate	md	Matrix spike/matrix spike duplicate RPD
bl	Laboratory blank contamination	nb	Negative laboratory blank contamination
bm	Missing Blank Information	p	Chemical preservation issue
bt	Trip Blank	pe	Post Extraction Spike
c	Calibration issue	ps	Performance Evaluation Sample
cl	Clean-up standard recovery	q	Quantitation issue
cp	Insufficient in growth (radiochemical data only)	r	Dual column RPD
cr	Chromatographic resolution	rp	Re-extraction precision issue [PAHs only]
d	Reporting limit raised due to chromatographic interference	rt	SIM ions not within + 2 seconds
dt	Dissolved result > total over limit	s	Surrogate recovery
e	Ether interference	sc	Sample collection issues
fd	Field duplicate RPDs	sp	Sample preparation issue
g	Chromatographic pattern match issue	su	Evidence of ion suppression
h	Holding times	t	Temperature Preservation Issue
i	Internal standard areas	u	High combined sample result uncertainty (radiochemical data only)
ii	Injection internal standard area or retention time exceedance	v	Compound identification issue
k	Estimated Maximum Possible Concentrations	x	Low % solids
l	LCS recoveries	y	Serial dilution results
lc	Labeled compound recovery	z	ICS results

APPENDIX C
Laboratory Analytical Reports

June 24, 2019

Mr. Zachary Neigh
AECOM (fka URS) - Germantown MD

Certificate of Analysis

Project Name:	2018-MIDDLE RIVER COMPLEX	Workorder:	3039542
Purchase Order:	95840ACM	Workorder ID:	LMC MRC / 95840ACM

Dear Mr. Neigh:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, June 12, 2019.

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 Mrs. Vanessa N Badman (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.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Holly Brown , Mr. Ravi Damera , Ms. Victoria Kirkpatrick , Mr. Naoum Tavantzis

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.



Mrs. Vanessa N Badman
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3039542001	MRC-SW15A-S-061219	Water	6/12/2019 11:15	6/12/2019 21:11	Collected by Client
3039542002	MRC-SW18A-S-061219	Water	6/12/2019 10:15	6/12/2019 21:11	Collected by Client
3039542003	MRC-SW5A1-S-061219	Water	6/12/2019 09:40	6/12/2019 21:11	Collected by Client
3039542004	MRC-SW13A-S-061219	Water	6/12/2019 10:30	6/12/2019 21:11	Collected by Client
3039542005	MRC-SW11B-S-061219	Water	6/12/2019 11:05	6/12/2019 21:11	Collected by Client
3039542006	MRC-SW5A2-S-061219	Water	6/12/2019 09:50	6/12/2019 21:11	Collected by Client
3039542007	MRC-SW12A-S-061219	Water	6/12/2019 10:45	6/12/2019 21:11	Collected by Client
3039542008	MRC-SW11A-S-061219	Water	6/12/2019 10:55	6/12/2019 21:11	Collected by Client
3039542009	MRC-SW5B-S-061219	Water	6/12/2019 10:00	6/12/2019 21:11	Collected by Client
3039542010	MRC-SW2A-061219	Water	6/12/2019 09:10	6/12/2019 21:11	Collected by Client
3039542011	MRC-SW1A-061219	Water	6/12/2019 08:45	6/12/2019 21:11	Collected by Client
3039542012	TB-061219	Water	6/12/2019 21:11	6/12/2019 21:11	Collected by Client

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SAMPLE SUMMARY

Workorder: 3039542 LMC MRC / 95840ACM

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).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- 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 performed 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.

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)
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 at the RDL
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

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542001**
Sample ID: **MRC-SW15A-S-061219**

Date Collected: 6/12/2019 11:15 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	6.3J	J	ug/L	10.0	3.1	SW846 8260B		6/19/19 17:14	DD	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/19/19 17:14	DD	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/19/19 17:14	DD	A
Bromobenzene	ND	25	ug/L	1.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/19/19 17:14	DD	A
Bromoform	ND	22,2 3,24	ug/L	1.0	0.40	SW846 8260B		6/19/19 17:14	DD	A
Bromomethane	1.6J	J,1	ug/L	2.0	0.39	SW846 8260B		6/19/19 17:14	DD	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/19/19 17:14	DD	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/19/19 17:14	DD	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/19/19 17:14	DD	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/19/19 17:14	DD	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/19/19 17:14	DD	A
Carbon Disulfide	ND	12,1 3	ug/L	1.0	0.23	SW846 8260B		6/19/19 17:14	DD	A
Carbon Tetrachloride	ND	17,1 8	ug/L	1.0	0.31	SW846 8260B		6/19/19 17:14	DD	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/19/19 17:14	DD	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/19/19 17:14	DD	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A
2-Chloroethylvinyl ether	ND	19,2 0	ug/L	2.0	0.38	SW846 8260B		6/19/19 17:14	DD	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/19/19 17:14	DD	A
Chloromethane	0.69J	J	ug/L	1.0	0.31	SW846 8260B		6/19/19 17:14	DD	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/19/19 17:14	DD	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/19/19 17:14	DD	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/19/19 17:14	DD	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/19/19 17:14	DD	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/19/19 17:14	DD	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/19/19 17:14	DD	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/19/19 17:14	DD	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/19/19 17:14	DD	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/19/19 17:14	DD	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
1,1-Dichloroethene	ND	4,5	ug/L	1.0	0.29	SW846 8260B		6/19/19 17:14	DD	A

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542001**
Sample ID: **MRC-SW15A-S-061219**

Date Collected: 6/12/2019 11:15 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
1,2-Dichloroethene, Total	ND	31	ug/L	2.0	0.45	SW846 8260B		6/19/19 17:14	DD	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
trans-1,2-Dichloroethene	ND	14,1 5	ug/L	1.0	0.26	SW846 8260B		6/19/19 17:14	DD	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/19/19 17:14	DD	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/19/19 17:14	DD	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/19/19 17:14	DD	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/19/19 17:14	DD	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/19/19 17:14	DD	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/19/19 17:14	DD	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/19/19 17:14	DD	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/19/19 17:14	DD	A
Freon 113	ND	10,1 1	ug/L	1.0	0.26	SW846 8260B		6/19/19 17:14	DD	A
Hexachlorobutadiene	ND	29	ug/L	5.0	1.0	SW846 8260B		6/19/19 17:14	DD	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/19/19 17:14	DD	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/19/19 17:14	DD	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
Methyl acetate	ND	30	ug/L	2.0	0.32	SW846 8260B		6/19/19 17:14	DD	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/19/19 17:14	DD	A
Methyl t-Butyl Ether	ND	16	ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A
4-Methyl-2-Pentanone(MIBK)	ND	21	ug/L	5.0	1.5	SW846 8260B		6/19/19 17:14	DD	A
Methylene Chloride	ND	6,7, 8,9	ug/L	1.0	0.45	SW846 8260B		6/19/19 17:14	DD	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/19/19 17:14	DD	A
n-Propylbenzene	ND	26,2 7,28	ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/19/19 17:14	DD	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/19/19 17:14	DD	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/19/19 17:14	DD	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/19/19 17:14	DD	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/19/19 17:14	DD	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/19/19 17:14	DD	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/19/19 17:14	DD	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/19/19 17:14	DD	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/19/19 17:14	DD	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A
Trichloroethene	0.88J	J	ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542001**
Sample ID: **MRC-SW15A-S-061219**

Date Collected: 6/12/2019 11:15 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Trichlorofluoromethane	ND	2,3	ug/L	1.0	0.24	SW846 8260B		6/19/19 17:14	DD	A	
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/19/19 17:14	DD	A	
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/19/19 17:14	DD	A	
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/19/19 17:14	DD	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/19/19 17:14	DD	A	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/19/19 17:14	DD	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/19/19 17:14	DD	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.4		%	62 - 133		SW846 8260B		6/19/19 17:14	DD	A	
4-Bromofluorobenzene (S)	107		%	79 - 114		SW846 8260B		6/19/19 17:14	DD	A	
Dibromofluoromethane (S)	97.6		%	78 - 116		SW846 8260B		6/19/19 17:14	DD	A	
Toluene-d8 (S)	95.6		%	76 - 127		SW846 8260B		6/19/19 17:14	DD	A	



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542002**
Sample ID: **MRC-SW18A-S-061219**

Date Collected: 6/12/2019 10:15 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.2J	J	ug/L	10.0	3.1	SW846 8260B		6/21/19 23:36	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/21/19 23:36	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/21/19 23:36	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/21/19 23:36	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/21/19 23:36	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/21/19 23:36	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/21/19 23:36	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/21/19 23:36	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/21/19 23:36	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/21/19 23:36	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:36	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/21/19 23:36	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:36	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/21/19 23:36	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/21/19 23:36	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/21/19 23:36	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/21/19 23:36	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:36	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/21/19 23:36	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/21/19 23:36	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/21/19 23:36	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/21/19 23:36	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:36	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/21/19 23:36	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/21/19 23:36	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/21/19 23:36	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/21/19 23:36	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/21/19 23:36	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/21/19 23:36	VLM	B
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542002**
Sample ID: **MRC-SW18A-S-061219**

Date Collected: 6/12/2019 10:15 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/21/19 23:36	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/21/19 23:36	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/21/19 23:36	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:36	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/21/19 23:36	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/21/19 23:36	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/21/19 23:36	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/21/19 23:36	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/21/19 23:36	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/21/19 23:36	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/21/19 23:36	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/21/19 23:36	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/21/19 23:36	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/21/19 23:36	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/21/19 23:36	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/21/19 23:36	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/21/19 23:36	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/21/19 23:36	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/21/19 23:36	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/21/19 23:36	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/21/19 23:36	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/21/19 23:36	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/21/19 23:36	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/21/19 23:36	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/21/19 23:36	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/21/19 23:36	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/21/19 23:36	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
Trichloroethene	0.69J	J	ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/21/19 23:36	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/21/19 23:36	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/21/19 23:36	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/21/19 23:36	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/21/19 23:36	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542002**
 Sample ID: **MRC-SW18A-S-061219**

Date Collected: 6/12/2019 10:15 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:36	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/21/19 23:36	VLM	B	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	107		%	62 - 133		SW846 8260B		6/21/19 23:36	VLM	B	
4-Bromofluorobenzene (S)	106		%	79 - 114		SW846 8260B		6/21/19 23:36	VLM	B	
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B		6/21/19 23:36	VLM	B	
Toluene-d8 (S)	105		%	76 - 127		SW846 8260B		6/21/19 23:36	VLM	B	



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542003**
Sample ID: **MRC-SW5A1-S-061219**

Date Collected: 6/12/2019 09:40 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.2J	J	ug/L	10.0	3.1	SW846 8260B		6/21/19 23:59	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/21/19 23:59	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/21/19 23:59	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/21/19 23:59	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/21/19 23:59	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/21/19 23:59	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/21/19 23:59	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/21/19 23:59	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/21/19 23:59	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/21/19 23:59	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:59	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/21/19 23:59	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:59	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/21/19 23:59	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/21/19 23:59	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/21/19 23:59	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/21/19 23:59	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:59	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/21/19 23:59	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/21/19 23:59	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/21/19 23:59	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/21/19 23:59	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:59	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/21/19 23:59	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/21/19 23:59	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/21/19 23:59	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/21/19 23:59	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/21/19 23:59	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/21/19 23:59	VLM	B
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542003**
Sample ID: **MRC-SW5A1-S-061219**

Date Collected: 6/12/2019 09:40 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/21/19 23:59	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/21/19 23:59	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/21/19 23:59	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/21/19 23:59	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/21/19 23:59	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/21/19 23:59	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/21/19 23:59	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/21/19 23:59	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/21/19 23:59	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/21/19 23:59	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/21/19 23:59	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/21/19 23:59	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/21/19 23:59	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/21/19 23:59	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/21/19 23:59	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/21/19 23:59	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/21/19 23:59	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/21/19 23:59	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/21/19 23:59	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/21/19 23:59	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/21/19 23:59	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/21/19 23:59	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/21/19 23:59	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/21/19 23:59	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/21/19 23:59	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/21/19 23:59	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/21/19 23:59	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/21/19 23:59	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/21/19 23:59	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/21/19 23:59	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/21/19 23:59	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/21/19 23:59	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542003**
 Sample ID: **MRC-SW5A1-S-061219**

Date Collected: 6/12/2019 09:40 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/21/19 23:59	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/21/19 23:59	VLM	B	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	107		%	62 - 133		SW846 8260B		6/21/19 23:59	VLM	B	
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B		6/21/19 23:59	VLM	B	
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B		6/21/19 23:59	VLM	B	
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B		6/21/19 23:59	VLM	B	



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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542004**
Sample ID: **MRC-SW13A-S-061219**

Date Collected: 6/12/2019 10:30 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.3J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 00:21	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 00:21	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 00:21	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 00:21	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 00:21	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 00:21	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 00:21	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 00:21	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 00:21	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 00:21	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:21	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 00:21	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:21	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 00:21	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 00:21	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 00:21	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 00:21	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:21	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 00:21	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 00:21	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 00:21	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 00:21	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:21	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 00:21	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 00:21	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 00:21	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 00:21	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 00:21	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 00:21	VLM	B
cis-1,2-Dichloroethene	0.36J	J	ug/L	1.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542004**
Sample ID: **MRC-SW13A-S-061219**

Date Collected: 6/12/2019 10:30 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 00:21	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 00:21	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 00:21	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:21	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 00:21	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 00:21	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 00:21	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 00:21	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 00:21	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 00:21	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 00:21	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 00:21	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 00:21	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 00:21	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 00:21	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 00:21	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 00:21	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 00:21	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 00:21	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 00:21	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 00:21	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 00:21	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 00:21	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 00:21	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 00:21	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 00:21	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 00:21	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
Trichloroethene	1.8		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 00:21	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 00:21	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 00:21	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 00:21	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 00:21	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542004**
 Sample ID: **MRC-SW13A-S-061219**

Date Collected: 6/12/2019 10:30 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:21	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 00:21	VLM	B	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	107		%	62 - 133		SW846 8260B			6/22/19 00:21	VLM	B
4-Bromofluorobenzene (S)	106		%	79 - 114		SW846 8260B			6/22/19 00:21	VLM	B
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B			6/22/19 00:21	VLM	B
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B			6/22/19 00:21	VLM	B



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542005**
Sample ID: **MRC-SW11B-S-061219**

Date Collected: 6/12/2019 11:05 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	3.1	SW846 8260B		6/22/19 00:44	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 00:44	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 00:44	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 00:44	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 00:44	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 00:44	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 00:44	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 00:44	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 00:44	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 00:44	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:44	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 00:44	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:44	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 00:44	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 00:44	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 00:44	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 00:44	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:44	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 00:44	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 00:44	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 00:44	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 00:44	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:44	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 00:44	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 00:44	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 00:44	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 00:44	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 00:44	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 00:44	VLM	B
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542005**
Sample ID: **MRC-SW11B-S-061219**

Date Collected: 6/12/2019 11:05 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 00:44	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 00:44	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 00:44	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 00:44	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 00:44	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 00:44	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 00:44	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 00:44	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 00:44	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 00:44	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 00:44	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 00:44	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 00:44	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 00:44	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 00:44	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 00:44	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 00:44	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 00:44	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 00:44	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 00:44	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 00:44	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 00:44	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 00:44	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 00:44	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 00:44	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 00:44	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 00:44	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
Trichloroethene	0.98J	J	ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 00:44	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 00:44	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 00:44	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 00:44	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 00:44	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542005**
 Sample ID: **MRC-SW11B-S-061219**

Date Collected: 6/12/2019 11:05 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 00:44	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 00:44	VLM	B	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B		6/22/19 00:44	VLM	B	
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B		6/22/19 00:44	VLM	B	
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B		6/22/19 00:44	VLM	B	
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B		6/22/19 00:44	VLM	B	



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542006**
Sample ID: **MRC-SW5A2-S-061219**

Date Collected: 6/12/2019 09:50 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	3.1	SW846 8260B		6/22/19 01:07	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 01:07	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:07	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:07	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 01:07	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 01:07	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 01:07	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 01:07	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 01:07	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 01:07	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:07	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:07	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:07	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 01:07	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 01:07	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 01:07	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 01:07	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:07	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:07	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:07	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 01:07	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 01:07	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:07	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 01:07	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:07	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:07	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 01:07	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:07	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 01:07	VLM	B
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542006**
Sample ID: **MRC-SW5A2-S-061219**

Date Collected: 6/12/2019 09:50 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:07	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:07	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:07	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:07	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:07	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 01:07	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:07	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 01:07	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 01:07	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:07	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 01:07	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 01:07	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 01:07	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 01:07	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 01:07	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 01:07	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 01:07	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 01:07	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:07	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 01:07	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 01:07	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 01:07	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:07	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 01:07	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 01:07	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 01:07	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 01:07	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:07	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 01:07	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:07	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 01:07	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 01:07	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542006**
 Sample ID: **MRC-SW5A2-S-061219**

Date Collected: 6/12/2019 09:50 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:07	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 01:07	VLM	B	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B			6/22/19 01:07	VLM	B
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B			6/22/19 01:07	VLM	B
Dibromofluoromethane (S)	104		%	78 - 116		SW846 8260B			6/22/19 01:07	VLM	B
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B			6/22/19 01:07	VLM	B



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542007**
Sample ID: **MRC-SW12A-S-061219**

Date Collected: 6/12/2019 10:45 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.3J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 01:29	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 01:29	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:29	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:29	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 01:29	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 01:29	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 01:29	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 01:29	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 01:29	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 01:29	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:29	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:29	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:29	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 01:29	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 01:29	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 01:29	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 01:29	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:29	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:29	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:29	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 01:29	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 01:29	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:29	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 01:29	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:29	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:29	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 01:29	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:29	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 01:29	VLM	B
cis-1,2-Dichloroethene	0.41J	J	ug/L	1.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542007**
Sample ID: **MRC-SW12A-S-061219**

Date Collected: 6/12/2019 10:45 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:29	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:29	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:29	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:29	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:29	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 01:29	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:29	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 01:29	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 01:29	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:29	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 01:29	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 01:29	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 01:29	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 01:29	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 01:29	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 01:29	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 01:29	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 01:29	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:29	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 01:29	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 01:29	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 01:29	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:29	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 01:29	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 01:29	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 01:29	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 01:29	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
Trichloroethene	2.1		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:29	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 01:29	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:29	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 01:29	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 01:29	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542007**
 Sample ID: **MRC-SW12A-S-061219**

Date Collected: 6/12/2019 10:45 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:29	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 01:29	VLM	B	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	109		%	62 - 133		SW846 8260B			6/22/19 01:29	VLM	B
4-Bromofluorobenzene (S)	104		%	79 - 114		SW846 8260B			6/22/19 01:29	VLM	B
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B			6/22/19 01:29	VLM	B
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B			6/22/19 01:29	VLM	B



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 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542008**
Sample ID: **MRC-SW11A-S-061219**

Date Collected: 6/12/2019 10:55 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	5.6J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 01:52	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 01:52	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:52	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:52	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 01:52	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 01:52	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 01:52	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 01:52	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 01:52	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 01:52	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:52	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:52	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:52	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 01:52	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 01:52	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 01:52	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 01:52	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:52	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:52	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:52	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 01:52	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 01:52	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:52	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 01:52	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:52	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:52	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 01:52	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:52	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 01:52	VLM	B
cis-1,2-Dichloroethene	0.37J	J	ug/L	1.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542008**
Sample ID: **MRC-SW11A-S-061219**

Date Collected: 6/12/2019 10:55 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:52	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 01:52	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:52	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 01:52	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 01:52	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 01:52	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:52	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 01:52	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 01:52	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 01:52	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 01:52	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 01:52	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 01:52	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 01:52	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 01:52	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 01:52	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 01:52	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 01:52	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:52	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 01:52	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 01:52	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 01:52	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 01:52	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 01:52	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 01:52	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 01:52	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 01:52	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
Trichloroethene	2.4		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 01:52	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 01:52	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 01:52	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 01:52	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 01:52	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542008**
 Sample ID: **MRC-SW11A-S-061219**

Date Collected: 6/12/2019 10:55 Matrix: Water
 Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 01:52	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 01:52	VLM	B	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B			6/22/19 01:52	VLM	B
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B			6/22/19 01:52	VLM	B
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B			6/22/19 01:52	VLM	B
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B			6/22/19 01:52	VLM	B



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542009**

Date Collected: 6/12/2019 10:00

Matrix: Water

Sample ID: **MRC-SW5B-S-061219**

Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.3J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 02:14	VLM	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 02:14	VLM	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:14	VLM	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:14	VLM	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 02:14	VLM	B
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 02:14	VLM	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 02:14	VLM	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 02:14	VLM	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 02:14	VLM	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 02:14	VLM	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:14	VLM	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:14	VLM	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:14	VLM	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 02:14	VLM	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 02:14	VLM	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 02:14	VLM	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 02:14	VLM	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:14	VLM	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:14	VLM	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:14	VLM	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 02:14	VLM	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 02:14	VLM	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:14	VLM	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 02:14	VLM	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:14	VLM	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:14	VLM	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 02:14	VLM	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:14	VLM	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 02:14	VLM	B
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542009**

Date Collected: 6/12/2019 10:00

Matrix: Water

Sample ID: **MRC-SW5B-S-061219**

Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:14	VLM	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:14	VLM	B
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:14	VLM	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:14	VLM	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:14	VLM	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 02:14	VLM	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:14	VLM	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 02:14	VLM	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 02:14	VLM	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:14	VLM	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 02:14	VLM	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 02:14	VLM	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 02:14	VLM	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 02:14	VLM	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 02:14	VLM	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 02:14	VLM	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 02:14	VLM	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 02:14	VLM	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:14	VLM	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 02:14	VLM	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 02:14	VLM	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 02:14	VLM	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:14	VLM	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 02:14	VLM	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 02:14	VLM	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 02:14	VLM	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 02:14	VLM	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:14	VLM	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 02:14	VLM	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:14	VLM	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 02:14	VLM	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 02:14	VLM	B

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542009**

Date Collected: 6/12/2019 10:00

Matrix: Water

Sample ID: **MRC-SW5B-S-061219**

Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:14	VLM	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 02:14	VLM	B	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B			6/22/19 02:14	VLM	B
4-Bromofluorobenzene (S)	104		%	79 - 114		SW846 8260B			6/22/19 02:14	VLM	B
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B			6/22/19 02:14	VLM	B
Toluene-d8 (S)	105		%	76 - 127		SW846 8260B			6/22/19 02:14	VLM	B



Mrs. Vanessa N Badman

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542010**
Sample ID: **MRC-SW2A-061219**

Date Collected: 6/12/2019 09:10 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	8.3J	J	ug/L	10.0	3.1	SW846 8260B		6/20/19 03:11	PDK	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/20/19 03:11	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/20/19 03:11	PDK	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/20/19 03:11	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/20/19 03:11	PDK	A
Bromomethane	0.81J	J	ug/L	1.0	0.39	SW846 8260B		6/20/19 03:11	PDK	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/20/19 03:11	PDK	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/20/19 03:11	PDK	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/20/19 03:11	PDK	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/20/19 03:11	PDK	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:11	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/20/19 03:11	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:11	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/20/19 03:11	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/20/19 03:11	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/20/19 03:11	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/20/19 03:11	PDK	A
Chloromethane	0.40J	J	ug/L	1.0	0.31	SW846 8260B		6/20/19 03:11	PDK	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/20/19 03:11	PDK	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/20/19 03:11	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/20/19 03:11	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/20/19 03:11	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:11	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/20/19 03:11	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/20/19 03:11	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/20/19 03:11	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/20/19 03:11	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/20/19 03:11	PDK	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/20/19 03:11	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542010**
Sample ID: **MRC-SW2A-061219**

Date Collected: 6/12/2019 09:10 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/20/19 03:11	PDK	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/20/19 03:11	PDK	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/20/19 03:11	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:11	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/20/19 03:11	PDK	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/20/19 03:11	PDK	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/20/19 03:11	PDK	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/20/19 03:11	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/20/19 03:11	PDK	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/20/19 03:11	PDK	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/20/19 03:11	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/20/19 03:11	PDK	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/20/19 03:11	PDK	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/20/19 03:11	PDK	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/20/19 03:11	PDK	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND	1	ug/L	5.0	1.5	SW846 8260B		6/20/19 03:11	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/20/19 03:11	PDK	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/20/19 03:11	PDK	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/20/19 03:11	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/20/19 03:11	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/20/19 03:11	PDK	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/20/19 03:11	PDK	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/20/19 03:11	PDK	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/20/19 03:11	PDK	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/20/19 03:11	PDK	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/20/19 03:11	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/20/19 03:11	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/20/19 03:11	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/20/19 03:11	PDK	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/20/19 03:11	PDK	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/20/19 03:11	PDK	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/20/19 03:11	PDK	A

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542010**
Sample ID: **MRC-SW2A-061219**

Date Collected: 6/12/2019 09:10 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:11	PDK	A
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/20/19 03:11	PDK	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	99.2		%	62 - 133		SW846 8260B		6/20/19 03:11	PDK	A
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B		6/20/19 03:11	PDK	A
Dibromofluoromethane (S)	95.9		%	78 - 116		SW846 8260B		6/20/19 03:11	PDK	A
Toluene-d8 (S)	101		%	76 - 127		SW846 8260B		6/20/19 03:11	PDK	A
SEMIVOLATILE SIM										
1,4-Dioxane	0.029J	J	ug/L	0.098	0.019	8270 SIM	6/19/19 17:50	J1H	6/20/19 10:10	GEC C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Methylnaphthalene-d10 (S)	83.8		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 10:10	GEC C
Fluoranthene-d10 (S)	91.7		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 10:10	GEC C



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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542011**
Sample ID: **MRC-SW1A-061219**

Date Collected: 6/12/2019 08:45 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	14.9		ug/L	10.0	3.1	SW846 8260B		6/20/19 03:34	PDK	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/20/19 03:34	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/20/19 03:34	PDK	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/20/19 03:34	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/20/19 03:34	PDK	A
Bromomethane	0.80J	J	ug/L	1.0	0.39	SW846 8260B		6/20/19 03:34	PDK	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/20/19 03:34	PDK	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/20/19 03:34	PDK	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/20/19 03:34	PDK	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/20/19 03:34	PDK	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:34	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/20/19 03:34	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:34	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/20/19 03:34	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/20/19 03:34	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/20/19 03:34	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/20/19 03:34	PDK	A
Chloromethane	0.35J	J	ug/L	1.0	0.31	SW846 8260B		6/20/19 03:34	PDK	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/20/19 03:34	PDK	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/20/19 03:34	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/20/19 03:34	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/20/19 03:34	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:34	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/20/19 03:34	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/20/19 03:34	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/20/19 03:34	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/20/19 03:34	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/20/19 03:34	PDK	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/20/19 03:34	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542011**
Sample ID: **MRC-SW1A-061219**

Date Collected: 6/12/2019 08:45 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/20/19 03:34	PDK	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/20/19 03:34	PDK	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/20/19 03:34	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/20/19 03:34	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/20/19 03:34	PDK	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/20/19 03:34	PDK	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/20/19 03:34	PDK	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/20/19 03:34	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/20/19 03:34	PDK	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/20/19 03:34	PDK	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/20/19 03:34	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/20/19 03:34	PDK	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/20/19 03:34	PDK	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/20/19 03:34	PDK	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/20/19 03:34	PDK	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND	1	ug/L	5.0	1.5	SW846 8260B		6/20/19 03:34	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/20/19 03:34	PDK	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/20/19 03:34	PDK	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/20/19 03:34	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/20/19 03:34	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/20/19 03:34	PDK	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/20/19 03:34	PDK	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/20/19 03:34	PDK	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/20/19 03:34	PDK	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/20/19 03:34	PDK	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/20/19 03:34	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/20/19 03:34	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/20/19 03:34	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/20/19 03:34	PDK	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/20/19 03:34	PDK	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/20/19 03:34	PDK	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/20/19 03:34	PDK	A

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID: **3039542011**
Sample ID: **MRC-SW1A-061219**

Date Collected: 6/12/2019 08:45 Matrix: Water
Date Received: 6/12/2019 21:11

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/20/19 03:34	PDK	A
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/20/19 03:34	PDK	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	101		%	62 - 133		SW846 8260B		6/20/19 03:34	PDK	A
4-Bromofluorobenzene (S)	97.3		%	79 - 114		SW846 8260B		6/20/19 03:34	PDK	A
Dibromofluoromethane (S)	96.8		%	78 - 116		SW846 8260B		6/20/19 03:34	PDK	A
Toluene-d8 (S)	96.4		%	76 - 127		SW846 8260B		6/20/19 03:34	PDK	A
SEMIVOLATILE SIM										
1,4-Dioxane	0.037J	J	ug/L	0.095	0.018	8270 SIM	6/19/19 17:50	J1H	6/20/19 10:39	GEC C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Methylnaphthalene-d10 (S)	85.5		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 10:39	GEC C
Fluoranthene-d10 (S)	91.6		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 10:39	GEC C



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ANALYTICAL RESULTS


Workorder: 3039542 LMC MRC / 95840ACM

Lab ID:	3039542012	Date Collected:	6/12/2019 21:11	Matrix:	Water
Sample ID:	TB-061219	Date Received:	6/12/2019 21:11		

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ADMINISTRATIVE

Sample Cancelled	Improper sampling container.		6/13/19 10:11	VNB	A
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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3039542001	1	MRC-SW15A-S-061219	SW846 8260B	Bromomethane
The Method Blank for method SW846 8260B reported a value greater than the reporting level for the analyte Bromomethane.				
3039542001	2	MRC-SW15A-S-061219	SW846 8260B	Trichlorofluoromethane
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 137 and the control limits were 38 to 123.				
3039542001	3	MRC-SW15A-S-061219	SW846 8260B	Trichlorofluoromethane
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 125 and the control limits were 38 to 123.				
3039542001	4	MRC-SW15A-S-061219	SW846 8260B	1,1-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 145 and the control limits were 63 to 128.				
3039542001	5	MRC-SW15A-S-061219	SW846 8260B	1,1-Dichloroethene
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The RPD was reported as 27.1 and the upper control limit is 21.				
3039542001	6	MRC-SW15A-S-061219	SW846 8260B	Methylene Chloride
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 164 and the control limits were 76 to 121.				
3039542001	7	MRC-SW15A-S-061219	SW846 8260B	Methylene Chloride
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 124 and the control limits were 76 to 121.				
3039542001	8	MRC-SW15A-S-061219	SW846 8260B	Methylene Chloride
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The RPD was reported as 27.7 and the upper control limit is 17.				
3039542001	9	MRC-SW15A-S-061219	SW846 8260B	Methylene Chloride
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 136 and the control limits were 76 to 121.				
3039542001	10	MRC-SW15A-S-061219	SW846 8260B	Freon 113
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Freon 113. The % Recovery was reported as 150 and the control limits were 50 to 130.				
3039542001	11	MRC-SW15A-S-061219	SW846 8260B	Freon 113
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Freon 113. The RPD was reported as 29.5 and the upper control limit is 26.				
3039542001	12	MRC-SW15A-S-061219	SW846 8260B	Carbon Disulfide
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Carbon Disulfide. The % Recovery was reported as 161 and the control limits were 57 to 131.				
3039542001	13	MRC-SW15A-S-061219	SW846 8260B	Carbon Disulfide
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Carbon Disulfide. The RPD was reported as 40.7 and the upper control limit is 28.				
3039542001	14	MRC-SW15A-S-061219	SW846 8260B	trans-1,2-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte trans-1,2-Dichloroethene. The % Recovery was reported as 144 and the control limits were 71 to 122.				
3039542001	15	MRC-SW15A-S-061219	SW846 8260B	trans-1,2-Dichloroethene
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte trans-1,2-Dichloroethene. The RPD was reported as 30.9 and the upper control limit is 22.				

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

3039542001	16	MRC-SW15A-S-061219	SW846 8260B	Methyl t-Butyl Ether
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 134 and the control limits were 69 to 115.				
3039542001	17	MRC-SW15A-S-061219	SW846 8260B	Carbon Tetrachloride
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Carbon Tetrachloride. The % Recovery was reported as 147 and the control limits were 62 to 132.				
3039542001	18	MRC-SW15A-S-061219	SW846 8260B	Carbon Tetrachloride
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Carbon Tetrachloride. The % Recovery was reported as 134 and the control limits were 62 to 132.				
3039542001	19	MRC-SW15A-S-061219	SW846 8260B	2-Chloroethylvinyl ether
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 2-Chloroethylvinyl ether. The % Recovery was reported as 0 and the control limits were 1 to 150.				
3039542001	20	MRC-SW15A-S-061219	SW846 8260B	2-Chloroethylvinyl ether
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte 2-Chloroethylvinyl ether. The % Recovery was reported as 0 and the control limits were 1 to 150.				
3039542001	21	MRC-SW15A-S-061219	SW846 8260B	4-Methyl-2-Pentanone(MIBK)
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte 4-Methyl-2-Pentanone(MIBK). The % Recovery was reported as 69.7 and the control limits were 71 to 146.				
3039542001	22	MRC-SW15A-S-061219	SW846 8260B	Bromoform
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Bromoform. The % Recovery was reported as 139 and the control limits were 70 to 123.				
3039542001	23	MRC-SW15A-S-061219	SW846 8260B	Bromoform
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Bromoform. The % Recovery was reported as 132 and the control limits were 70 to 123.				
3039542001	24	MRC-SW15A-S-061219	SW846 8260B	Bromoform
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromoform. The % Recovery was reported as 145 and the control limits were 70 to 123.				
3039542001	25	MRC-SW15A-S-061219	SW846 8260B	Bromobenzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Bromobenzene. The % Recovery was reported as 120 and the control limits were 81 to 119.				
3039542001	26	MRC-SW15A-S-061219	SW846 8260B	n-Propylbenzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte n-Propylbenzene. The % Recovery was reported as 146 and the control limits were 74 to 122.				
3039542001	27	MRC-SW15A-S-061219	SW846 8260B	n-Propylbenzene
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte n-Propylbenzene. The % Recovery was reported as 138 and the control limits were 74 to 122.				
3039542001	28	MRC-SW15A-S-061219	SW846 8260B	n-Propylbenzene
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte n-Propylbenzene. The % Recovery was reported as 137 and the control limits were 74 to 122.				
3039542001	29	MRC-SW15A-S-061219	SW846 8260B	Hexachlorobutadiene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 130 and the control limits were 55 to 128.				
3039542001	30	MRC-SW15A-S-061219	SW846 8260B	Methyl acetate
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Methyl acetate. The RPD was reported as 31.2 and the upper control limit is 18.				

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ANALYTICAL RESULTS

Workorder: 3039542 LMC MRC / 95840ACM

3039542001	31	MRC-SW15A-S-061219	SW846 8260B	1,2-Dichloroethene, Total
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The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,2-Dichloroethene, Total. The % Recovery was reported as 129 and the control limits were 78 to 125.

3039542010	1	MRC-SW2A-061219	SW846 8260B	4-Methyl-2-Pentanone(MIBK)
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The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 4-Methyl-2-Pentanone(MIBK). The % Recovery was reported as 70.5 and the control limits were 71 to 146.

3039542011	1	MRC-SW1A-061219	SW846 8260B	4-Methyl-2-Pentanone(MIBK)
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The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 4-Methyl-2-Pentanone(MIBK). The % Recovery was reported as 70.5 and the control limits were 71 to 146.

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID	Sample ID	Analysis Method	Prep Method
3039542001	MRC-SW15A-S-061219	SW846 8260B	
3039542002	MRC-SW18A-S-061219	SW846 8260B	
3039542003	MRC-SW5A1-S-061219	SW846 8260B	
3039542004	MRC-SW13A-S-061219	SW846 8260B	
3039542005	MRC-SW11B-S-061219	SW846 8260B	
3039542006	MRC-SW5A2-S-061219	SW846 8260B	
3039542007	MRC-SW12A-S-061219	SW846 8260B	
3039542008	MRC-SW11A-S-061219	SW846 8260B	
3039542009	MRC-SW5B-S-061219	SW846 8260B	
3039542010	MRC-SW2A-061219	8270 SIM	SW846 3510C
3039542010	MRC-SW2A-061219	SW846 8260B	
3039542011	MRC-SW1A-061219	8270 SIM	SW846 3510C
3039542011	MRC-SW1A-061219	SW846 8260B	

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

QC Batch: EXTR/56844 **Analysis Method:** 8270 SIM

QC Batch Method: SW846 3510C

Associated Lab Samples: 3039542010, 3039542011

METHOD BLANK: 2966729

Parameter	Blank Result	Units	Reporting Limit
1,4-Dioxane	ND	ug/L	0.10
2-Methylnaphthalene-d10 (S)	86.3	%	29 - 112
Fluoranthene-d10 (S)	100	%	45 - 130

LABORATORY CONTROL SAMPLE: 2966730

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
1,4-Dioxane	51.1	ug/L	1	0.51	22 - 75
2-Methylnaphthalene-d10 (S)	74.2	%			29 - 112
Fluoranthene-d10 (S)	87.5	%			45 - 130

MATRIX SPIKE: 2966731 DUPLICATE: 2966732 ORIGINAL: 3039864008

****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.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
1,4-Dioxane	0	ug/L	.97	.45464	.5018	46.8	51.7	22 - 75	9.86	30
2-Methylnaphthalene-d10 (S)	81	%				81	82	29 - 112		
Fluoranthene-d10 (S)	89.6	%				89.6	88.4	45 - 130		

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

QC Batch: VOMS/51286 **Analysis Method:** SW846 8260B

QC Batch Method: SW846 8260B

Associated Lab Samples: 3039542001, 3039542002, 3039542003, 3039542004, 3039542005, 3039542006, 3039542007, 3039542008, 3039542009

METHOD BLANK: 2966475

Parameter	Blank Result	Units	Reporting Limit
Acetone	ND	ug/L	10.0
tert-Amyl methyl ether	ND	ug/L	1.0
Benzene	ND	ug/L	1.0
Bromobenzene	ND	ug/L	1.0
Bromochloromethane	ND	ug/L	1.0
Bromodichloromethane	ND	ug/L	1.0
Bromoform	ND	ug/L	1.0
Bromomethane	1.8	ug/L	1.0
2-Butanone	ND	ug/L	10.0
tert-Butyl Alcohol	ND	ug/L	10.0
n-Butylbenzene	ND	ug/L	2.0
tert-Butylbenzene	ND	ug/L	2.0
sec-Butylbenzene	ND	ug/L	1.0
Carbon Disulfide	ND	ug/L	1.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chlorodibromomethane	ND	ug/L	1.0
Chloroethane	ND	ug/L	1.0
2-Chloroethylvinyl ether	ND	ug/L	2.0
Chloroform	ND	ug/L	1.0
Chloromethane	0.77J	ug/L	1.0
o-Chlorotoluene	ND	ug/L	1.0
p-Chlorotoluene	ND	ug/L	1.0
Cyclohexane	ND	ug/L	1.0
1,2-Dibromo-3-chloropropane	ND	ug/L	7.0
1,2-Dibromoethane	ND	ug/L	1.0
Dibromomethane	ND	ug/L	1.0
1,2-Dichlorobenzene	ND	ug/L	1.0
1,3-Dichlorobenzene	ND	ug/L	1.0
1,4-Dichlorobenzene	ND	ug/L	1.0
Dichlorodifluoromethane	ND	ug/L	1.0
1,1-Dichloroethane	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
1,2-Dichloroethene, Total	ND	ug/L	2.0
cis-1,2-Dichloroethene	ND	ug/L	1.0
trans-1,2-Dichloroethene	ND	ug/L	1.0

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

1,3-Dichloropropane	ND	ug/L	1.0
2,2-Dichloropropane	ND	ug/L	1.0
1,2-Dichloropropane	ND	ug/L	1.0
cis-1,3-Dichloropropene	ND	ug/L	1.0
trans-1,3-Dichloropropene	ND	ug/L	1.0
1,3-Dichloropropene, Total	ND	ug/L	2.0
Diisopropyl ether	ND	ug/L	1.0
Ethyl tert-butyl ether	ND	ug/L	1.0
Ethylbenzene	ND	ug/L	1.0
Freon 113	ND	ug/L	1.0
Hexachlorobutadiene	ND	ug/L	5.0
2-Hexanone	ND	ug/L	5.0
Isopropylbenzene	ND	ug/L	1.0
p-Isopropyltoluene	ND	ug/L	1.0
Methyl acetate	ND	ug/L	2.0
Methyl cyclohexane	ND	ug/L	1.0
Methyl t-Butyl Ether	ND	ug/L	1.0
4-Methyl-2-Pentanone(MIBK)	ND	ug/L	5.0
Methylene Chloride	ND	ug/L	1.0
Naphthalene	ND	ug/L	2.0
n-Propylbenzene	ND	ug/L	1.0
Styrene	ND	ug/L	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Toluene	ND	ug/L	1.0
Total Xylenes	ND	ug/L	3.0
1,2,3-Trichlorobenzene	ND	ug/L	2.0
1,2,4-Trichlorobenzene	ND	ug/L	2.0
1,1,1-Trichloroethane	ND	ug/L	1.0
1,1,2-Trichloroethane	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Trichlorofluoromethane	ND	ug/L	1.0
1,2,3-Trichloropropane	ND	ug/L	2.0
1,2,4-Trimethylbenzene	ND	ug/L	1.0
Vinyl Acetate	ND	ug/L	5.0
Vinyl Chloride	ND	ug/L	1.0
o-Xylene	ND	ug/L	1.0
mp-Xylene	ND	ug/L	2.0
1,2-Dichloroethane-d4 (S)	93.5	%	62 - 133
4-Bromofluorobenzene (S)	111	%	79 - 114
Dibromofluoromethane (S)	95	%	78 - 116
Toluene-d8 (S)	100	%	76 - 127

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

LABORATORY CONTROL SAMPLE: 2966476

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Acetone	114	ug/L	100	114	40 - 151
tert-Amyl methyl ether	116	ug/L	20	23.2	75 - 121
Benzene	111	ug/L	20	22.3	80 - 124
Bromobenzene	111	ug/L	20	22.3	81 - 119
Bromochloromethane	112	ug/L	20	22.3	73 - 117
Bromodichloromethane	109	ug/L	20	21.7	79 - 126
Bromoform	145*	ug/L	20	29.0	70 - 123
Bromomethane	128	ug/L	20	25.5	45 - 148
2-Butanone	103	ug/L	100	103	50 - 152
tert-Butyl Alcohol	120	ug/L	100	120	17 - 168
n-Butylbenzene	96.7	ug/L	20	19.3	71 - 130
tert-Butylbenzene	109	ug/L	20	21.7	72 - 124
sec-Butylbenzene	112	ug/L	20	22.3	72 - 127
Carbon Disulfide	118	ug/L	20	23.6	57 - 131
Carbon Tetrachloride	129	ug/L	20	25.7	62 - 132
Chlorobenzene	98.2	ug/L	20	19.6	85 - 117
Chlorodibromomethane	113	ug/L	20	22.7	77 - 122
Chloroethane	111	ug/L	20	22.3	51 - 142
2-Chloroethylvinyl ether	88.1	ug/L	20	17.6	1 - 150
Chloroform	110	ug/L	20	21.9	78 - 122
Chloromethane	120	ug/L	20	24.0	38 - 156
o-Chlorotoluene	108	ug/L	20	21.5	78 - 126
p-Chlorotoluene	109	ug/L	20	21.8	78 - 125
Cyclohexane	122	ug/L	20	24.4	66 - 130
1,2-Dibromo-3-chloropropane	103	ug/L	20	20.7	59 - 133
1,2-Dibromoethane	108	ug/L	20	21.7	80 - 124
Dibromomethane	107	ug/L	20	21.3	81 - 125
1,2-Dichlorobenzene	101	ug/L	20	20.3	82 - 118
1,3-Dichlorobenzene	101	ug/L	20	20.2	81 - 118
1,4-Dichlorobenzene	99.5	ug/L	20	19.9	81 - 116
Dichlorodifluoromethane	91.8	ug/L	20	18.4	17 - 166
1,1-Dichloroethane	106	ug/L	20	21.1	78 - 124
1,2-Dichloroethane	103	ug/L	20	20.6	70 - 133
1,1-Dichloroethene	118	ug/L	20	23.7	63 - 128
1,2-Dichloroethene, Total	109	ug/L	40	43.6	78 - 125
cis-1,2-Dichloroethene	107	ug/L	20	21.3	78 - 125
trans-1,2-Dichloroethene	112	ug/L	20	22.3	71 - 122
1,3-Dichloropropane	107	ug/L	20	21.4	82 - 126
2,2-Dichloropropane	74.1	ug/L	20	14.8	64 - 129
1,2-Dichloropropane	118	ug/L	20	23.7	81 - 127
cis-1,3-Dichloropropene	91	ug/L	20	18.2	81 - 121
trans-1,3-Dichloropropene	100	ug/L	20	20.1	78 - 126

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

1,3-Dichloropropene, Total	95.7	ug/L	40	38.3	80 - 123
Diisopropyl ether	112	ug/L	20	22.4	74 - 131
Ethyl tert-butyl ether	110	ug/L	20	22.0	75 - 123
Ethylbenzene	105	ug/L	20	20.9	80 - 124
Freon 113	110	ug/L	20	22.0	50 - 130
Hexachlorobutadiene	114	ug/L	20	22.7	55 - 128
2-Hexanone	108	ug/L	100	108	65 - 154
Isopropylbenzene	119	ug/L	20	23.9	73 - 129
p-Isopropyltoluene	105	ug/L	20	20.9	72 - 123
Methyl acetate	108	ug/L	20	21.6	70 - 130
Methyl cyclohexane	106	ug/L	20	21.3	70 - 130
Methyl t-Butyl Ether	111	ug/L	20	22.2	69 - 115
4-Methyl-2-Pentanone(MIBK)	78.5	ug/L	100	78.5	71 - 146
Methylene Chloride	136*	ug/L	20	27.1	76 - 121
Naphthalene	101	ug/L	20	20.3	56 - 134
n-Propylbenzene	137*	ug/L	20	27.4	74 - 122
Styrene	112	ug/L	20	22.4	79 - 123
1,1,1,2-Tetrachloroethane	107	ug/L	20	21.4	78 - 121
1,1,2,2-Tetrachloroethane	107	ug/L	20	21.4	74 - 135
Tetrachloroethene	105	ug/L	20	20.9	72 - 124
Toluene	102	ug/L	20	20.4	80 - 125
Total Xylenes	107	ug/L	60	63.9	79 - 125
1,2,3-Trichlorobenzene	98.2	ug/L	20	19.6	61 - 126
1,2,4-Trichlorobenzene	102	ug/L	20	20.4	67 - 123
1,1,1-Trichloroethane	110	ug/L	20	22.1	66 - 130
1,1,2-Trichloroethane	101	ug/L	20	20.3	82 - 126
Trichloroethene	110	ug/L	20	22.0	77 - 124
Trichlorofluoromethane	122	ug/L	20	24.5	38 - 123
1,2,3-Trichloropropane	108	ug/L	20	21.7	75 - 132
1,2,4-Trimethylbenzene	108	ug/L	20	21.6	76 - 125
Vinyl Acetate	93.8	ug/L	20	18.8	58 - 136
Vinyl Chloride	123	ug/L	20	24.7	27 - 138
o-Xylene	102	ug/L	20	20.4	79 - 124
mp-Xylene	109	ug/L	40	43.5	79 - 125
1,2-Dichloroethane-d4 (S)	99.4	%			62 - 133
4-Bromofluorobenzene (S)	107	%			79 - 114
Dibromofluoromethane (S)	99.7	%			78 - 116
Toluene-d8 (S)	99.3	%			76 - 127

MATRIX SPIKE: 2966739 DUPLICATE: 2966740 ORIGINAL: 3039542001

****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.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

Acetone	6.32409	ug/L	100	137.12	101.177	131	94.9	40 - 151	30.2	40
tert-Amyl methyl ether	0	ug/L	20	22.1526	22.9324	111	115	75 - 121	3.46	40
Benzene	0	ug/L	20	22.0814	20.9033	110	105	80 - 124	5.48	26
Bromobenzene	0	ug/L	20	23.9933	21.276	120*	106	81 - 119	12	17
Bromochloromethane	0	ug/L	20	22.7082	22.5958	114	113	73 - 117	.5	19
Bromodichloromethane	0	ug/L	20	23.6314	22.2584	118	111	79 - 126	5.98	16
Bromoform	0	ug/L	20	27.788	26.4188	139*	132*	70 - 123	5.05	16
Bromomethane	1.5786	ug/L	20	25.3012	30.4017	119	144	45 - 148	18.3	26
2-Butanone	0	ug/L	100	102.08	89.74	102	89.7	50 - 152	12.9	16
tert-Butyl Alcohol	0	ug/L	100	125.835	99.8282	126	99.8	17 - 168	23	40
n-Butylbenzene	0	ug/L	20	23.0631	21.4387	115	107	71 - 130	7.3	20
tert-Butylbenzene	0	ug/L	20	24.4644	22.2308	122	111	72 - 124	9.57	17
sec-Butylbenzene	0	ug/L	20	23.9265	22.647	120	113	72 - 127	5.49	17
Carbon Disulfide	0	ug/L	20	32.1693	21.2997	161*	106	57 - 131	40.7	28
Carbon Tetrachloride	0	ug/L	20	29.3184	26.7844	147*	134*	62 - 132	9.03	17
Chlorobenzene	0	ug/L	20	21.4568	19.1943	107	96	85 - 117	11.1	15
Chlorodibromomethane	0	ug/L	20	22.7713	21.7671	114	109	77 - 122	4.51	15
Chloroethane	0	ug/L	20	22.6524	20.9941	113	105	51 - 142	7.6	24
2-Chloroethylvinyl ether	0	ug/L	20	0	0	0*	0*	1 - 150	NC	40
Chloroform	0	ug/L	20	22.8727	21.4553	114	107	78 - 122	6.4	16
Chloromethane	.6878	ug/L	20	24.9348	24.342	121	118	38 - 156	2.41	27
o-Chlorotoluene	0	ug/L	20	22.9218	20.6865	115	103	78 - 126	10.3	17
p-Chlorotoluene	0	ug/L	20	23.3634	20.639	117	103	78 - 125	12.4	16
Cyclohexane	0	ug/L	20	25.6397	23.6481	128	118	66 - 130	8.08	20
1,2-Dibromo-3-chloropropane	0	ug/L	20	20.3446	18.1685	102	90.8	59 - 133	11.3	26
1,2-Dibromoethane	0	ug/L	20	20.7853	19.8691	104	99.3	80 - 124	4.51	19
Dibromomethane	0	ug/L	20	22.3105	21.0259	112	105	81 - 125	5.93	16
1,2-Dichlorobenzene	0	ug/L	20	21.3865	19.9584	107	99.8	82 - 118	6.91	15
1,3-Dichlorobenzene	0	ug/L	20	21.5512	20.0589	108	100	81 - 118	7.17	16
1,4-Dichlorobenzene	0	ug/L	20	21.3902	19.8085	107	99	81 - 116	7.68	15
Dichlorodifluoromethane	0	ug/L	20	20.1196	19.1094	101	95.5	17 - 166	5.15	24
1,1-Dichloroethane	0	ug/L	20	21.8109	20.0548	109	100	78 - 124	8.39	15
1,2-Dichloroethane	0	ug/L	20	22.839	22.4309	114	112	70 - 133	1.8	19
1,1-Dichloroethene	0	ug/L	20	29.0462	22.1238	145*	111	63 - 128	27.1	21
1,2-Dichloroethene, Total	0	ug/L	40	51.5684	42.4875	129*	106	78 - 125	19.3	40
cis-1,2-Dichloroethene	0	ug/L	20	22.7186	21.3549	114	107	78 - 125	6.19	21
trans-1,2-Dichloroethene	0	ug/L	20	28.8498	21.1326	144*	106	71 - 122	30.9	22
1,3-Dichloropropane	0	ug/L	20	21.0758	19.7102	105	98.6	82 - 126	6.7	15
2,2-Dichloropropane	0	ug/L	20	22.0422	20.1455	110	101	64 - 129	8.99	18
1,2-Dichloropropane	0	ug/L	20	24.8365	21.6486	124	108	81 - 127	13.7	15
cis-1,3-Dichloropropene	0	ug/L	20	19.0847	17.435	95.4	87.2	81 - 121	9.03	16
trans-1,3-Dichloropropene	0	ug/L	20	20.3975	19.9175	102	99.6	78 - 126	2.38	18
1,3-Dichloropropene, Total	0	ug/L	40	39.4821	37.3524	98.7	93.4	80 - 123	5.54	16
Diisopropyl ether	0	ug/L	20	22.857	21.5684	114	108	74 - 131	5.8	15
Ethyl tert-butyl ether	0	ug/L	20	22.0984	21.5253	110	108	75 - 123	2.63	16
Ethylbenzene	0	ug/L	20	22.3855	20.5184	112	103	80 - 124	8.7	19

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

Freon 113	0	ug/L	20	29.931	22.2459	150*	111	50 - 130	29.5	26
Hexachlorobutadiene	0	ug/L	20	25.9721	23.704	130*	119	55 - 128	9.13	35
2-Hexanone	0	ug/L	100	113.035	97.7902	113	97.8	65 - 154	14.5	17
Isopropylbenzene	0	ug/L	20	25.6983	22.3841	128	112	73 - 129	13.8	18
p-Isopropyltoluene	0	ug/L	20	23.3082	21.7057	117	109	72 - 123	7.12	17
Methyl acetate	0	ug/L	20	20.4341	14.9222	102	74.6	70 - 130	31.2	18
Methyl cyclohexane	0	ug/L	20	23.9519	21.5947	120	108	70 - 130	10.4	18
Methyl t-Butyl Ether	0	ug/L	20	26.7993	22.2488	134*	111	69 - 115	18.6	20
4-Methyl-2-Pentanone(MIBK)	0	ug/L	100	80.8918	69.7339	80.9	69.7*	71 - 146	14.8	16
Methylene Chloride	0	ug/L	20	32.803	24.8154	164*	124*	76 - 121	27.7	17
Naphthalene	0	ug/L	20	21.4724	19.5883	107	97.9	56 - 134	9.18	40
n-Propylbenzene	0	ug/L	20	29.2027	27.5451	146*	138*	74 - 122	5.84	20
Styrene	0	ug/L	20	24.0667	20.7905	120	104	79 - 123	14.6	16
1,1,1,2-Tetrachloroethane	0	ug/L	20	22.8559	21.6949	114	108	78 - 121	5.21	16
1,1,2,2-Tetrachloroethane	0	ug/L	20	21.4952	19.1755	107	95.9	74 - 135	11.4	16
Tetrachloroethene	0	ug/L	20	20.105	18.2389	101	91.2	72 - 124	9.73	38
Toluene	0	ug/L	20	22.3389	19.427	112	97.1	80 - 125	13.9	20
Total Xylenes	0	ug/L	60	68.5425	61.5534	114	103	79 - 125	10.7	35
1,2,3-Trichlorobenzene	0	ug/L	20	21.8887	20.5693	109	103	61 - 126	6.22	36
1,2,4-Trichlorobenzene	0	ug/L	20	22.283	21.5331	111	108	67 - 123	3.42	22
1,1,1-Trichloroethane	0	ug/L	20	24.6461	22.874	123	114	66 - 130	7.46	20
1,1,2-Trichloroethane	0	ug/L	20	19.9022	18.8941	99.5	94.5	82 - 126	5.2	15
Trichloroethene	.88241	ug/L	20	23.5686	22.3517	113	107	77 - 124	5.3	18
Trichlorofluoromethane	0	ug/L	20	27.381	24.9929	137*	125*	38 - 123	9.12	23
1,2,3-Trichloropropane	0	ug/L	20	23.5379	20.9112	118	105	75 - 132	11.8	19
1,2,4-Trimethylbenzene	0	ug/L	20	22.9465	21.166	115	106	76 - 125	8.07	24
Vinyl Acetate	0	ug/L	20	17.1129	16.4767	85.6	82.4	58 - 136	3.79	17
Vinyl Chloride	0	ug/L	20	23.3109	25.4218	117	127	27 - 138	8.66	40
o-Xylene	0	ug/L	20	22.1604	19.6884	111	98.4	79 - 124	11.8	19
mp-Xylene	0	ug/L	40	46.3822	41.865	116	105	79 - 125	10.2	21
1,2-Dichloroethane-d4 (S)	103	%				103	104	62 - 133		
4-Bromofluorobenzene (S)	110	%				110	105	79 - 114		
Dibromofluoromethane (S)	101	%				101	96.6	78 - 116		
Toluene-d8 (S)	100	%				100	95.4	76 - 127		

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

QC Batch: VOMS/51294 **Analysis Method:** SW846 8260B

QC Batch Method: SW846 8260B

Associated Lab Samples: 3039542010, 3039542011

METHOD BLANK: 2966920

Parameter	Blank Result	Units	Reporting Limit
Acetone	ND	ug/L	10.0
tert-Amyl methyl ether	ND	ug/L	1.0
Benzene	ND	ug/L	1.0
Bromobenzene	ND	ug/L	1.0
Bromochloromethane	ND	ug/L	1.0
Bromodichloromethane	ND	ug/L	1.0
Bromoform	ND	ug/L	1.0
Bromomethane	0.77J	ug/L	1.0
2-Butanone	ND	ug/L	10.0
tert-Butyl Alcohol	ND	ug/L	10.0
n-Butylbenzene	ND	ug/L	2.0
tert-Butylbenzene	ND	ug/L	2.0
sec-Butylbenzene	ND	ug/L	1.0
Carbon Disulfide	ND	ug/L	1.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chlorodibromomethane	ND	ug/L	1.0
Chloroethane	ND	ug/L	1.0
2-Chloroethylvinyl ether	ND	ug/L	2.0
Chloroform	ND	ug/L	1.0
Chloromethane	0.42J	ug/L	1.0
o-Chlorotoluene	ND	ug/L	1.0
p-Chlorotoluene	ND	ug/L	1.0
Cyclohexane	ND	ug/L	1.0
1,2-Dibromo-3-chloropropane	ND	ug/L	7.0
1,2-Dibromoethane	ND	ug/L	1.0
Dibromomethane	ND	ug/L	1.0
1,2-Dichlorobenzene	ND	ug/L	1.0
1,3-Dichlorobenzene	ND	ug/L	1.0
1,4-Dichlorobenzene	ND	ug/L	1.0
Dichlorodifluoromethane	ND	ug/L	1.0
1,1-Dichloroethane	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
1,2-Dichloroethene, Total	ND	ug/L	2.0
cis-1,2-Dichloroethene	ND	ug/L	1.0
trans-1,2-Dichloroethene	ND	ug/L	1.0

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

1,3-Dichloropropane	ND	ug/L	1.0
2,2-Dichloropropane	ND	ug/L	1.0
1,2-Dichloropropane	ND	ug/L	1.0
cis-1,3-Dichloropropene	ND	ug/L	1.0
trans-1,3-Dichloropropene	ND	ug/L	1.0
1,3-Dichloropropene, Total	ND	ug/L	2.0
Diisopropyl ether	ND	ug/L	1.0
Ethyl tert-butyl ether	ND	ug/L	1.0
Ethylbenzene	ND	ug/L	1.0
Freon 113	ND	ug/L	1.0
Hexachlorobutadiene	ND	ug/L	5.0
2-Hexanone	ND	ug/L	5.0
Isopropylbenzene	ND	ug/L	1.0
p-Isopropyltoluene	ND	ug/L	1.0
Methyl acetate	ND	ug/L	2.0
Methyl cyclohexane	ND	ug/L	1.0
Methyl t-Butyl Ether	ND	ug/L	1.0
4-Methyl-2-Pentanone(MIBK)	ND	ug/L	5.0
Methylene Chloride	ND	ug/L	1.0
Naphthalene	ND	ug/L	2.0
n-Propylbenzene	ND	ug/L	1.0
Styrene	ND	ug/L	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Toluene	ND	ug/L	1.0
Total Xylenes	ND	ug/L	3.0
1,2,3-Trichlorobenzene	ND	ug/L	2.0
1,2,4-Trichlorobenzene	ND	ug/L	2.0
1,1,1-Trichloroethane	ND	ug/L	1.0
1,1,2-Trichloroethane	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Trichlorofluoromethane	ND	ug/L	1.0
1,2,3-Trichloropropane	ND	ug/L	2.0
1,2,4-Trimethylbenzene	ND	ug/L	1.0
Vinyl Acetate	ND	ug/L	5.0
Vinyl Chloride	ND	ug/L	1.0
o-Xylene	ND	ug/L	1.0
mp-Xylene	ND	ug/L	2.0
1,2-Dichloroethane-d4 (S)	95.5	%	62 - 133
4-Bromofluorobenzene (S)	107	%	79 - 114
Dibromofluoromethane (S)	94.8	%	78 - 116
Toluene-d8 (S)	93	%	76 - 127

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

LABORATORY CONTROL SAMPLE: 2966921

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Acetone	104	ug/L	100	104	40 - 151
tert-Amyl methyl ether	108	ug/L	20	21.6	75 - 121
Benzene	106	ug/L	20	21.2	80 - 124
Bromobenzene	100	ug/L	20	20.1	81 - 119
Bromochloromethane	103	ug/L	20	20.7	73 - 117
Bromodichloromethane	103	ug/L	20	20.5	79 - 126
Bromoform	127*	ug/L	20	25.4	70 - 123
Bromomethane	131	ug/L	20	26.3	45 - 148
2-Butanone	94.8	ug/L	100	94.8	50 - 152
tert-Butyl Alcohol	77.6	ug/L	100	77.6	17 - 168
n-Butylbenzene	112	ug/L	20	22.5	71 - 130
tert-Butylbenzene	110	ug/L	20	22.1	72 - 124
sec-Butylbenzene	115	ug/L	20	23.1	72 - 127
Carbon Disulfide	118	ug/L	20	23.7	57 - 131
Carbon Tetrachloride	122	ug/L	20	24.5	62 - 132
Chlorobenzene	94.6	ug/L	20	18.9	85 - 117
Chlorodibromomethane	103	ug/L	20	20.6	77 - 122
Chloroethane	92.5	ug/L	20	18.5	51 - 142
2-Chloroethylvinyl ether	77.6	ug/L	20	15.5	1 - 150
Chloroform	106	ug/L	20	21.1	78 - 122
Chloromethane	114	ug/L	20	22.9	38 - 156
o-Chlorotoluene	102	ug/L	20	20.5	78 - 126
p-Chlorotoluene	105	ug/L	20	21.1	78 - 125
Cyclohexane	115	ug/L	20	22.9	66 - 130
1,2-Dibromo-3-chloropropane	84.9	ug/L	20	17.0	59 - 133
1,2-Dibromoethane	99.4	ug/L	20	19.9	80 - 124
Dibromomethane	104	ug/L	20	20.9	81 - 125
1,2-Dichlorobenzene	93.1	ug/L	20	18.6	82 - 118
1,3-Dichlorobenzene	99.9	ug/L	20	20.0	81 - 118
1,4-Dichlorobenzene	99.1	ug/L	20	19.8	81 - 116
Dichlorodifluoromethane	81.3	ug/L	20	16.3	17 - 166
1,1-Dichloroethane	106	ug/L	20	21.1	78 - 124
1,2-Dichloroethane	95.5	ug/L	20	19.1	70 - 133
1,1-Dichloroethene	101	ug/L	20	20.2	63 - 128
1,2-Dichloroethene, Total	107	ug/L	40	42.9	78 - 125
cis-1,2-Dichloroethene	104	ug/L	20	20.9	78 - 125
trans-1,2-Dichloroethene	110	ug/L	20	22.1	71 - 122
1,3-Dichloropropane	99.3	ug/L	20	19.9	82 - 126
2,2-Dichloropropane	119	ug/L	20	23.7	64 - 129
1,2-Dichloropropane	114	ug/L	20	22.8	81 - 127
cis-1,3-Dichloropropene	92.4	ug/L	20	18.5	81 - 121
trans-1,3-Dichloropropene	99.9	ug/L	20	20.0	78 - 126

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

1,3-Dichloropropene, Total	96.2	ug/L	40	38.5	80 - 123
Diisopropyl ether	110	ug/L	20	21.9	74 - 131
Ethyl tert-butyl ether	106	ug/L	20	21.2	75 - 123
Ethylbenzene	101	ug/L	20	20.1	80 - 124
Freon 113	103	ug/L	20	20.5	50 - 130
Hexachlorobutadiene	123	ug/L	20	24.5	55 - 128
2-Hexanone	96	ug/L	100	96.0	65 - 154
Isopropylbenzene	119	ug/L	20	23.8	73 - 129
p-Isopropyltoluene	109	ug/L	20	21.7	72 - 123
Methyl acetate	82.9	ug/L	20	16.6	70 - 130
Methyl cyclohexane	112	ug/L	20	22.3	70 - 130
Methyl t-Butyl Ether	105	ug/L	20	21.1	69 - 115
4-Methyl-2-Pentanone(MIBK)	70.5*	ug/L	100	70.5	71 - 146
Methylene Chloride	115	ug/L	20	22.9	76 - 121
Naphthalene	98.2	ug/L	20	19.6	56 - 134
n-Propylbenzene	131*	ug/L	20	26.2	74 - 122
Styrene	103	ug/L	20	20.7	79 - 123
1,1,1,2-Tetrachloroethane	102	ug/L	20	20.3	78 - 121
1,1,2,2-Tetrachloroethane	96.9	ug/L	20	19.4	74 - 135
Tetrachloroethene	87.5	ug/L	20	17.5	72 - 124
Toluene	97.4	ug/L	20	19.5	80 - 125
Total Xylenes	99.1	ug/L	60	59.4	79 - 125
1,2,3-Trichlorobenzene	98.8	ug/L	20	19.8	61 - 126
1,2,4-Trichlorobenzene	106	ug/L	20	21.2	67 - 123
1,1,1-Trichloroethane	105	ug/L	20	21.0	66 - 130
1,1,2-Trichloroethane	96.1	ug/L	20	19.2	82 - 126
Trichloroethene	110	ug/L	20	22.1	77 - 124
Trichlorofluoromethane	101	ug/L	20	20.2	38 - 123
1,2,3-Trichloropropane	96.9	ug/L	20	19.4	75 - 132
1,2,4-Trimethylbenzene	108	ug/L	20	21.6	76 - 125
Vinyl Acetate	102	ug/L	20	20.4	58 - 136
Vinyl Chloride	119	ug/L	20	23.8	27 - 138
o-Xylene	96.3	ug/L	20	19.3	79 - 124
mp-Xylene	100	ug/L	40	40.2	79 - 125
1,2-Dichloroethane-d4 (S)	91.6	%			62 - 133
4-Bromofluorobenzene (S)	105	%			79 - 114
Dibromofluoromethane (S)	97.9	%			78 - 116
Toluene-d8 (S)	98.8	%			76 - 127

MATRIX SPIKE: 2967120 DUPLICATE: 2967121 ORIGINAL: 3040101007

****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.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

Acetone	3.22558	ug/L	100	93.9738	96.7277	90.7	93.5	40 - 151	2.89	40
tert-Amyl methyl ether	0	ug/L	20	22.6314	21.2891	113	106	75 - 121	6.11	40
Benzene	0	ug/L	20	23.3495	19.8272	117	99.1	80 - 124	16.3	26
Bromochloromethane	0	ug/L	20	22.1246	21.3319	111	107	73 - 117	3.65	19
Bromodichloromethane	0	ug/L	20	17.3132	21.43	86.6	107	79 - 126	21.3	16
Bromoform	0	ug/L	20	27.9296	33.2626	140*	166*	70 - 123	17.4	16
Bromomethane	1.41362	ug/L	20	8.78696	11.9532	36.9*	52.7	45 - 148	30.5	26
2-Butanone	0	ug/L	100	88.4026	92.1087	88.4	92.1	50 - 152	4.11	16
tert-Butyl Alcohol	2.23083	ug/L	100	73.5711	93.7194	71.3	91.5	17 - 168	24.1	40
Carbon Disulfide	0	ug/L	20	26.6546	20.6553	133*	103	57 - 131	25.4	28
Carbon Tetrachloride	0	ug/L	20	28.2399	25.1308	141*	126	62 - 132	11.7	17
Chlorobenzene	0	ug/L	20	21.4397	18.1577	107	90.8	85 - 117	16.6	15
Chlorodibromomethane	0	ug/L	20	21.9922	21.3424	110	107	77 - 122	3	15
Chloroethane	0	ug/L	20	17.7009	22.3079	88.5	112	51 - 142	23	24
Chloroform	0	ug/L	20	22.9522	20.3081	115	102	78 - 122	12.2	16
Chloromethane	.63619	ug/L	20	14.632	23.7276	70	115	38 - 156	47.4	27
1,2-Dibromo-3-chloropropane	0	ug/L	20	18.3572	17.7151	91.8	88.6	59 - 133	3.56	26
1,2-Dibromoethane	0	ug/L	20	20.1851	22.8339	101	114	80 - 124	12.3	19
Dichlorodifluoromethane	0	ug/L	20	15.7959	18.0388	79	90.2	17 - 166	13.3	24
1,1-Dichloroethane	0	ug/L	20	22.9443	18.3879	115	91.9	78 - 124	22	15
1,2-Dichloroethane	0	ug/L	20	21.2032	21.3644	106	107	70 - 133	.76	19
1,1-Dichloroethene	0	ug/L	20	22.4893	17.9059	112	89.5	63 - 128	22.7	21
cis-1,2-Dichloroethene	0	ug/L	20	23.658	19.4434	118	97.2	78 - 125	19.6	21
trans-1,2-Dichloroethene	0	ug/L	20	25.6721	20.4327	128*	102	71 - 122	22.7	22
1,2-Dichloropropane	0	ug/L	20	16.172	20.2663	80.9*	101	81 - 127	22.5	15
cis-1,3-Dichloropropene	0	ug/L	20	18.1498	14.4431	90.7	72.2*	81 - 121	22.7	16
trans-1,3-Dichloropropene	0	ug/L	20	19.8904	15.7952	99.5	79	78 - 126	23	18
Diisopropyl ether	0	ug/L	20	23.9853	19.9592	120	99.8	74 - 131	18.3	15
Ethyl tert-butyl ether	0	ug/L	20	22.3647	20.1827	112	101	75 - 123	10.3	16
Ethylbenzene	.53003	ug/L	20	22.5553	19.7321	110	96	80 - 124	13.4	19
2-Hexanone	0	ug/L	100	94.4537	111.463	94.5	111	65 - 154	16.5	17
Methyl t-Butyl Ether	0	ug/L	20	22.2717	21.3723	111	107	69 - 115	4.12	20
4-Methyl-2-Pentanone(MIBK)	0	ug/L	100	69.7677	58.8197	69.8*	58.8*	71 - 146	17	16
Methylene Chloride	0	ug/L	20	26.962	22.9262	135*	115	76 - 121	16.2	17
Styrene	0	ug/L	20	21.3865	26.6212	107	133*	79 - 123	21.8	16
1,1,1,2-Tetrachloroethane	0	ug/L	20	18.4038	26.4119	92	132	74 - 135	35.7	16
Tetrachloroethene	0	ug/L	20	20.4229	15.8374	102	79.2	72 - 124	25.3	38
Toluene	0	ug/L	20	21.2997	15.9164	106	79.6*	80 - 125	28.9	20
Total Xylenes	1.55378	ug/L	60	70.2288	63.7008	114	104	79 - 125	9.75	35
1,1,1-Trichloroethane	0	ug/L	20	23.7159	21.1872	119	106	66 - 130	11.3	20
1,1,2-Trichloroethane	0	ug/L	20	19.5035	16.7657	97.5	83.8	82 - 126	15.1	15
Trichloroethene	0	ug/L	20	22.5695	20.3514	113	102	77 - 124	10.3	18
Vinyl Chloride	0	ug/L	20	19.9579	21.3281	99.8	107	27 - 138	6.64	40
o-Xylene	0	ug/L	20	21.8295	22.4585	109	112	79 - 124	2.84	19
mp-Xylene	1.55378	ug/L	40	48.3994	41.2423	117	99.2	79 - 125	16	21
1,2-Dichloroethane-d4 (S)	97.9	%				97.9	101	62 - 133		

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

4-Bromofluorobenzene (S)	105	%	105	134*	79 - 114
Dibromofluoromethane (S)	101	%	101	99.5	78 - 116
Toluene-d8 (S)	96.8	%	96.8	81.9	76 - 127

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

QC Batch: VOMS/51335 **Analysis Method:** SW846 8260B

QC Batch Method: SW846 8260B

Associated Lab Samples: 3039542002, 3039542003, 3039542004, 3039542005, 3039542006, 3039542007, 3039542008, 3039542009

METHOD BLANK: 2968376

Parameter	Blank Result	Units	Reporting Limit
Acetone	ND	ug/L	10.0
tert-Amyl methyl ether	ND	ug/L	1.0
Benzene	ND	ug/L	1.0
Bromobenzene	ND	ug/L	1.0
Bromochloromethane	ND	ug/L	1.0
Bromodichloromethane	ND	ug/L	1.0
Bromoform	ND	ug/L	1.0
Bromomethane	ND	ug/L	1.0
2-Butanone	ND	ug/L	10.0
tert-Butyl Alcohol	ND	ug/L	10.0
n-Butylbenzene	ND	ug/L	2.0
tert-Butylbenzene	ND	ug/L	2.0
sec-Butylbenzene	ND	ug/L	1.0
Carbon Disulfide	ND	ug/L	1.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chlorodibromomethane	ND	ug/L	1.0
Chloroethane	ND	ug/L	1.0
2-Chloroethylvinyl ether	ND	ug/L	2.0
Chloroform	ND	ug/L	1.0
Chloromethane	ND	ug/L	1.0
o-Chlorotoluene	ND	ug/L	1.0
p-Chlorotoluene	ND	ug/L	1.0
Cyclohexane	ND	ug/L	1.0
1,2-Dibromo-3-chloropropane	ND	ug/L	7.0
1,2-Dibromoethane	ND	ug/L	1.0
Dibromomethane	ND	ug/L	1.0
1,2-Dichlorobenzene	ND	ug/L	1.0
1,3-Dichlorobenzene	ND	ug/L	1.0
1,4-Dichlorobenzene	ND	ug/L	1.0
Dichlorodifluoromethane	ND	ug/L	1.0
1,1-Dichloroethane	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
1,2-Dichloroethene, Total	ND	ug/L	2.0
cis-1,2-Dichloroethene	ND	ug/L	1.0
trans-1,2-Dichloroethene	ND	ug/L	1.0

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

1,3-Dichloropropane	ND	ug/L	1.0
2,2-Dichloropropane	ND	ug/L	1.0
1,2-Dichloropropane	ND	ug/L	1.0
cis-1,3-Dichloropropene	ND	ug/L	1.0
trans-1,3-Dichloropropene	ND	ug/L	1.0
1,3-Dichloropropene, Total	ND	ug/L	2.0
Diisopropyl ether	ND	ug/L	1.0
Ethyl tert-butyl ether	ND	ug/L	1.0
Ethylbenzene	ND	ug/L	1.0
Freon 113	ND	ug/L	1.0
Hexachlorobutadiene	ND	ug/L	5.0
2-Hexanone	ND	ug/L	5.0
Isopropylbenzene	ND	ug/L	1.0
p-Isopropyltoluene	ND	ug/L	1.0
Methyl acetate	ND	ug/L	2.0
Methyl cyclohexane	ND	ug/L	1.0
Methyl t-Butyl Ether	ND	ug/L	1.0
4-Methyl-2-	ND	ug/L	5.0
Pentanone(MIBK)			
Methylene Chloride	ND	ug/L	1.0
Naphthalene	ND	ug/L	2.0
n-Propylbenzene	ND	ug/L	1.0
Styrene	ND	ug/L	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Toluene	ND	ug/L	1.0
Total Xylenes	ND	ug/L	3.0
1,2,3-Trichlorobenzene	ND	ug/L	2.0
1,2,4-Trichlorobenzene	ND	ug/L	2.0
1,1,1-Trichloroethane	ND	ug/L	1.0
1,1,2-Trichloroethane	ND	ug/L	1.0
Trichloroethene	0.62J	ug/L	1.0
Trichlorofluoromethane	ND	ug/L	1.0
1,2,3-Trichloropropane	ND	ug/L	2.0
1,2,4-Trimethylbenzene	ND	ug/L	1.0
Vinyl Acetate	ND	ug/L	5.0
Vinyl Chloride	ND	ug/L	1.0
o-Xylene	ND	ug/L	1.0
mp-Xylene	ND	ug/L	2.0
1,2-Dichloroethane-d4 (S)	109	%	62 - 133
4-Bromofluorobenzene (S)	105	%	79 - 114
Dibromofluoromethane (S)	105	%	78 - 116
Toluene-d8 (S)	105	%	76 - 127

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

LABORATORY CONTROL SAMPLE: 2968377

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Acetone	90.4	ug/L	100	90.4	40 - 151
tert-Amyl methyl ether	107	ug/L	20	21.4	75 - 121
Benzene	103	ug/L	20	20.5	80 - 124
Bromobenzene	105	ug/L	20	21.0	81 - 119
Bromochloromethane	110	ug/L	20	21.9	73 - 117
Bromodichloromethane	105	ug/L	20	21.0	79 - 126
Bromoform	98.6	ug/L	20	19.7	70 - 123
Bromomethane	97.7	ug/L	20	19.5	45 - 148
2-Butanone	91.3	ug/L	100	91.3	50 - 152
tert-Butyl Alcohol	79	ug/L	100	79.0	17 - 168
n-Butylbenzene	110	ug/L	20	22.1	71 - 130
tert-Butylbenzene	105	ug/L	20	21.0	72 - 124
sec-Butylbenzene	108	ug/L	20	21.6	72 - 127
Carbon Disulfide	105	ug/L	20	21.0	57 - 131
Carbon Tetrachloride	110	ug/L	20	22.1	62 - 132
Chlorobenzene	104	ug/L	20	20.8	85 - 117
Chlorodibromomethane	108	ug/L	20	21.6	77 - 122
Chloroethane	99.5	ug/L	20	19.9	51 - 142
2-Chloroethylvinyl ether	93	ug/L	20	18.6	1 - 150
Chloroform	102	ug/L	20	20.5	78 - 122
Chloromethane	94.1	ug/L	20	18.8	38 - 156
o-Chlorotoluene	101	ug/L	20	20.1	78 - 126
p-Chlorotoluene	101	ug/L	20	20.3	78 - 125
Cyclohexane	109	ug/L	20	21.8	66 - 130
1,2-Dibromo-3-chloropropane	95.5	ug/L	20	19.1	59 - 133
1,2-Dibromoethane	106	ug/L	20	21.2	80 - 124
Dibromomethane	107	ug/L	20	21.4	81 - 125
1,2-Dichlorobenzene	104	ug/L	20	20.7	82 - 118
1,3-Dichlorobenzene	102	ug/L	20	20.5	81 - 118
1,4-Dichlorobenzene	104	ug/L	20	20.7	81 - 116
Dichlorodifluoromethane	106	ug/L	20	21.3	17 - 166
1,1-Dichloroethane	97.9	ug/L	20	19.6	78 - 124
1,2-Dichloroethane	100	ug/L	20	20.0	70 - 133
1,1-Dichloroethene	103	ug/L	20	20.5	63 - 128
1,2-Dichloroethene, Total	100	ug/L	40	40.0	78 - 125
cis-1,2-Dichloroethene	98.2	ug/L	20	19.6	78 - 125
trans-1,2-Dichloroethene	102	ug/L	20	20.4	71 - 122
1,3-Dichloropropane	99.2	ug/L	20	19.8	82 - 126
2,2-Dichloropropane	103	ug/L	20	20.6	64 - 129
1,2-Dichloropropane	98.2	ug/L	20	19.6	81 - 127
cis-1,3-Dichloropropene	102	ug/L	20	20.4	81 - 121
trans-1,3-Dichloropropene	103	ug/L	20	20.6	78 - 126

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QUALITY CONTROL DATA

Workorder: 3039542 LMC MRC / 95840ACM

1,3-Dichloropropene, Total	102	ug/L	40	41.0	80 - 123
Diisopropyl ether	95.4	ug/L	20	19.1	74 - 131
Ethyl tert-butyl ether	100	ug/L	20	20.0	75 - 123
Ethylbenzene	103	ug/L	20	20.7	80 - 124
Freon 113	108	ug/L	20	21.6	50 - 130
Hexachlorobutadiene	125	ug/L	20	24.9	55 - 128
2-Hexanone	90	ug/L	100	90.0	65 - 154
Isopropylbenzene	107	ug/L	20	21.4	73 - 129
p-Isopropyltoluene	110	ug/L	20	21.9	72 - 123
Methyl acetate	91.6	ug/L	20	18.3	70 - 130
Methyl cyclohexane	106	ug/L	20	21.1	70 - 130
Methyl t-Butyl Ether	103	ug/L	20	20.7	69 - 115
4-Methyl-2-Pentanone(MIBK)	89.3	ug/L	100	89.3	71 - 146
Methylene Chloride	103	ug/L	20	20.6	76 - 121
Naphthalene	103	ug/L	20	20.5	56 - 134
n-Propylbenzene	104	ug/L	20	20.8	74 - 122
Styrene	104	ug/L	20	20.8	79 - 123
1,1,1,2-Tetrachloroethane	109	ug/L	20	21.7	78 - 121
1,1,2,2-Tetrachloroethane	99.1	ug/L	20	19.8	74 - 135
Tetrachloroethene	107	ug/L	20	21.3	72 - 124
Toluene	102	ug/L	20	20.4	80 - 125
Total Xylenes	104	ug/L	60	62.6	79 - 125
1,2,3-Trichlorobenzene	104	ug/L	20	20.7	61 - 126
1,2,4-Trichlorobenzene	109	ug/L	20	21.9	67 - 123
1,1,1-Trichloroethane	107	ug/L	20	21.5	66 - 130
1,1,2-Trichloroethane	98.8	ug/L	20	19.8	82 - 126
Trichloroethene	103	ug/L	20	20.6	77 - 124
Trichlorofluoromethane	118	ug/L	20	23.5	38 - 123
1,2,3-Trichloropropane	103	ug/L	20	20.7	75 - 132
1,2,4-Trimethylbenzene	104	ug/L	20	20.8	76 - 125
Vinyl Acetate	98.2	ug/L	20	19.6	58 - 136
Vinyl Chloride	97.9	ug/L	20	19.6	27 - 138
o-Xylene	104	ug/L	20	20.7	79 - 124
mp-Xylene	105	ug/L	40	41.9	79 - 125
1,2-Dichloroethane-d4 (S)	105	%			62 - 133
4-Bromofluorobenzene (S)	108	%			79 - 114
Dibromofluoromethane (S)	108	%			78 - 116
Toluene-d8 (S)	103	%			76 - 127

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 3039542 LMC MRC / 95840ACM

QUALITY CONTROL PARAMETER QUALIFIERS

Lab ID	#	Sample Type	Analytical Method	Analyte
2966475	1	Method Blank	SW846 8260B	Bromomethane
The Method Blank for method SW846 8260B reported a value greater than the reporting level for the analyte Bromomethane.				
2966476	2	Lab Control Standard	SW846 8260B	Bromoform
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromoform. The % Recovery was reported as 145 and the control limits were 70 to 123.				
2966476	3	Lab Control Standard	SW846 8260B	Methylene Chloride
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 136 and the control limits were 76 to 121.				
2966476	4	Lab Control Standard	SW846 8260B	n-Propylbenzene
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte n-Propylbenzene. The % Recovery was reported as 137 and the control limits were 74 to 122.				
2966921	5	Lab Control Standard	SW846 8260B	4-Methyl-2-Pentanone(MIBK)
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 4-Methyl-2-Pentanone(MIBK). The % Recovery was reported as 70.5 and the control limits were 71 to 146.				
2966921	6	Lab Control Standard	SW846 8260B	n-Propylbenzene
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte n-Propylbenzene. The % Recovery was reported as 131 and the control limits were 74 to 122.				
2966921	7	Lab Control Standard	SW846 8260B	Bromoform
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromoform. The % Recovery was reported as 127 and the control limits were 70 to 123.				
2967120	8	Matrix Spike	SW846 8260B	Acetone
This volatile sample was analyzed past the method specified 12 hour tune time. Data is not believed to be impacted.				

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3039542 LMC MRC / 95840ACM

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3039542001	MRC-SW15A-S-061219			SW846 8260B	VOMS/51286
3039542010	MRC-SW2A-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039542011	MRC-SW1A-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039542010	MRC-SW2A-061219			SW846 8260B	VOMS/51294
3039542011	MRC-SW1A-061219			SW846 8260B	VOMS/51294
3039542002	MRC-SW18A-S-061219			SW846 8260B	VOMS/51335
3039542003	MRC-SW5A1-S-061219			SW846 8260B	VOMS/51335
3039542004	MRC-SW13A-S-061219			SW846 8260B	VOMS/51335
3039542005	MRC-SW11B-S-061219			SW846 8260B	VOMS/51335
3039542006	MRC-SW5A2-S-061219			SW846 8260B	VOMS/51335
3039542007	MRC-SW12A-S-061219			SW846 8260B	VOMS/51335
3039542008	MRC-SW11A-S-061219			SW846 8260B	VOMS/51335
3039542009	MRC-SW5B-S-061219			SW846 8260B	VOMS/51335

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34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430



Environmental

**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
SAMPLER. INSTRUCTIONS ON THE BACK.**

Client Name: AECOM
Address: 12420 Milestone Center Drive, Suite 150
Germantown, MD 20876
Contact: Ravi Damara & Holly Brown
Phone#: 301-674-3199
Project Name#: LMC MRC / 95840ACM
Bill To: Ravi Damara

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? -Y ravi.damara@aecom.com
Fax? -Y No:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	Matrix	Enter Number of Containers Per Sample or Field Results Below.	ANALYSES/METHOD REQUESTED
1 MRC-SW15A-S-061219	6/12/19	1115	G SW	2	1,4-Dioxane (8270D SIM)
2 MRC-SW15A-S-061219	6/12/19	1015	G SW	2	VOCs (8260C)
3 MRC-SW15A-S-061219	6/12/19	0940	G SW	2	
4 MRC-SW15A-S-061219	6/12/19	1030	G SW	2	
5 MRC-SW15B-S-061219	6/12/19	1105	G SW	2	
6 MRC-SW15A-S-061219	6/12/19	0950	G SW	2	
7 MRC-SW15A-S-061219	6/12/19	1045	G SW	2	
8 MRC-SW15A-S-061219	6/12/19	1055	G SW	2	
9 MRC-SW15B-S-061219	6/12/19	1000	G SW	2	
10 MRC-SW2A-061219	6/12/19	0910	G SW	2	

Project Comments: Please also email data to holly.brown@aecom.com and naoum.lavantris@aecom.com

LOGGED BY (signature):
REVIEWED BY (signature):

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<i>[Signature]</i>	6-12-19	1444	<i>[Signature]</i>	6-12-19	1444
<i>[Signature]</i>	6-12-19		<i>[Signature]</i>	6-12-19	2111
		6			
		8			
		10			

ALS Field Services: Pickup Labor
 Composite Sampling Rental Equipment
 Other:

State Samples Collected In	Special Processing	Deliverables	Reportable to PADEP?	Sample Disposal
NY <input type="checkbox"/>	USACE <input type="checkbox"/>	CLP-like <input type="checkbox"/>	Yes <input type="checkbox"/>	Lab <input checked="" type="checkbox"/>
NJ <input type="checkbox"/>	Navy <input type="checkbox"/>	USACE <input type="checkbox"/>		Special <input type="checkbox"/>
PA <input type="checkbox"/>				
NC <input type="checkbox"/>				

EDDS: Formal Type- EQuIS and .csv
*Matrix: A=Air; DW=Drinking Water; GW=Groundwater; O=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater



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P. 717-944-5541
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Environmental

Client Name: AECOM
Address: 12420 Milestone Center Drive, Suite 150
 Germantown, MD 20876
Contact: Ravi Damara & Holly Brown
Phone#: 301-674-3199
Project Name#: LMC MRC / 95840ACM
Bill To: Ravi Damara
 TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? -Y ravi.damara@aecom.com
Fax? -Y No:

**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS**
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK

COC #: 3039542
ALS Quote #: 2 of 2
Receipt Information (Completed by Receiving Lab)
Cooler Temp: 4°C **Therm ID:** 461
No. of Coolers: Y N Initial
 Custody Seals Present? Y N Initial
 (If present) Seals Intact? Y N Initial
 Received on Ice? Y N Initial
 COC Labels Complete/Accurate? Y N Initial
 Cont. In Good Cond.? Y N Initial
 Correct Containers? Y N Initial
 Correct Sample Volumes? Y N Initial
 Correct Preservation? Y N Initial
 Headspace/Volatiles? Y N Initial
Counter/Tracking #:

ANALYSES/METHOD REQUESTED

Container Type	CG	AG	Enter Number of Containers Per Sample or Field Results Below.
Container Size	40mL	1L	
Preservative	HCl		
	VOCs (8260C)	1,4-Dioxane (8270D SIM)	

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	Matrix	Container	Volume	ALS Field Services: _Composite Sampling _Pickup _Labor _Rental Equipment _Other:
1 MRC-SWA-0612A	6-12-19	0815	G	SW	2	
2 TB-0612A19	6-12-19	1400	G	SW	2	trip blank
3			G	GW		* Trip Blank rec in 1
4			G	GW		A. 250mL Bottle.
5			G	GW		DN 6/13
6			G	GW		
7			G	GW		
8			G	GW		
9			G	GW		
10			G	GW		

Project Comments: Please also email data to holly.brown@aecom.com and naoum.tavantzis@aecom.com

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Holly Brown / AECOM	6-12-19	1442	[Signature]	6-12-19	1449
[Signature]	6-12-19		[Signature]	6-12-19	2111

Deliverables
 Standard
 CLP-like
 USACE

Special Processing
 USACE Navy
 Reportable to PADEP? Yes No
 PWSID # _____

State Samples Collected In
 NY NJ PA NC

Sample Disposal
 Lab Special

EDDS: Format Type- EQUIS and CSV

* G=Grab, C=Composite **Matrix - Air=Air, DW=Drinking Water, GW=Groundwater, OL=Oil, OL=Other Liquid, SL=Sludge, SO=Soil, WP=Wipe, WW=Wastewater





301 Fulling Mill Road
 Middletown, PA 17057
 P: (717) 944-5541
 F: (717) 944-1430

Condition of Sample Receipt Form

Client: AECOM Work Order #: 3039542 Initials: DN Date: 6/13

- 1. Were airbills / tracking numbers present and recorded?..... NONE YES NO
 Tracking number: _____
- 2. Are Custody Seals on shipping containers intact?..... NONE YES NO
- 3. Are Custody Seals on sample containers intact?..... NONE YES NO
- 4. Is there a COC (Chain-of-Custody) present?..... YES NO
- 5. Are the COC and bottle labels complete, legible and in agreement?..... YES NO
 - 5a. Does the COC contain sample locations?..... YES NO
 - 5b. Does the COC contain date and time of sample collection for all samples?..... YES NO
 - 5c. Does the COC contain sample collectors name?..... YES NO
 - 5d. Does the COC note the type(s) of preservation for all bottles?..... YES NO
 - 5e. Does the COC note the number of bottles submitted for each sample?..... YES NO
 - 5f. Does the COC note the type of sample, composite or grab?..... YES NO
 - 5g. Does the COC note the matrix of the sample(s)?..... YES NO
- 6. Are all aqueous samples requiring preservation preserved correctly?..... N/A YES NO
- 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... YES NO
- 8. Are all samples within holding times for the requested analyses?..... YES NO
- 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... YES NO
- 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... N/A YES NO
- 11. Were the samples received on ice?..... YES NO
- 12. Were sample temperatures measured at 0.0-6.0°C..... YES NO
- 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... YES NO
 - 13a. Are the samples required for SDWA compliance reporting?..... N/A YES NO
 - 13b. Did the client provide a SDWA PWS ID#?..... N/A YES NO
 - 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... N/A YES NO
 - 13d. Did the client provide the SDWA sample location ID/Description?..... N/A YES NO
 - 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... N/A YES NO

Cooler #: _____
 Temperature (°C): 4 _____
 Thermometer ID: 401 _____
 Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):



June 26, 2019

Mr. Zachary Neigh
AECOM (fka URS) - Germantown MD

Certificate of Analysis

Project Name:	2018-MIDDLE RIVER COMPLEX	Workorder:	3039864
Purchase Order:	95840ACM	Workorder ID:	LMC MRC June SWS/95840ACM

Dear Mr. Neigh:

Enclosed are the analytical results for samples received by the laboratory on Friday, June 14, 2019.

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 Mrs. Vanessa N Badman (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 Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Holly Brown , Mr. Ravi Damera , Ms. Victoria Kirkpatrick , Mr. Naoum Tavantzis

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.



Mrs. Vanessa N Badman
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3039864001	MRC-SW16A-S-061219	Water	6/12/2019 11:50	6/14/2019 08:25	Collected by Client
3039864002	MRC-SW7A-S-061219	Water	6/12/2019 14:00	6/14/2019 08:25	Collected by Client
3039864003	MRC-SW9B-S-S061219	Water	6/12/2019 13:40	6/14/2019 08:25	Collected by Client
3039864004	MRC-SW9A-S-061219	Water	6/12/2019 13:50	6/14/2019 08:25	Collected by Client
3039864005	MRC-SW7B-S-061219	Water	6/12/2019 14:10	6/14/2019 08:25	Collected by Client
3039864006	MRC-SW6B-S-061219	Water	6/12/2019 13:00	6/14/2019 08:25	Collected by Client
3039864007	MRC-SW8A-S-061219	Water	6/12/2019 12:10	6/14/2019 08:25	Collected by Client
3039864008	MRC-SW8B-S-061219	Water	6/12/2019 12:30	6/14/2019 08:25	Collected by Client
3039864009	MRC-SW8B-S-DUP-061219	Water	6/12/2019 12:45	6/14/2019 08:25	Collected by Client
3039864010	MRC-SW6A-S-061219	Water	6/12/2019 13:30	6/14/2019 08:25	Collected by Client
3039864011	MRC-SW17A-S-061219	Water	6/12/2019 15:00	6/14/2019 08:25	Collected by Client
3039864012	FB-061319	Water	6/13/2019 14:00	6/14/2019 08:25	Collected by Client

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SAMPLE SUMMARY

Workorder: 3039864 LMC MRC June SWS/95840ACM

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).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- 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 performed 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.

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)
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 at the RDL
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

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864001**
Sample ID: **MRC-SW16A-S-061219**

Date Collected: 6/12/2019 11:50 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.8J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 02:37	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 02:37	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:37	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:37	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 02:37	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 02:37	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 02:37	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 02:37	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 02:37	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 02:37	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:37	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:37	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:37	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 02:37	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 02:37	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 02:37	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 02:37	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:37	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:37	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:37	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 02:37	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 02:37	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:37	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 02:37	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:37	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:37	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 02:37	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:37	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 02:37	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864001**
Sample ID: **MRC-SW16A-S-061219**

Date Collected: 6/12/2019 11:50 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:37	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:37	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:37	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:37	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:37	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 02:37	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:37	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 02:37	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 02:37	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:37	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 02:37	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 02:37	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 02:37	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 02:37	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 02:37	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 02:37	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 02:37	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 02:37	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:37	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 02:37	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 02:37	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 02:37	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:37	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 02:37	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 02:37	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 02:37	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 02:37	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:37	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 02:37	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:37	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 02:37	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 02:37	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864001**
 Sample ID: **MRC-SW16A-S-061219**

Date Collected: 6/12/2019 11:50 Matrix: Water
 Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:37	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 02:37	VLM	A	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	110		%	62 - 133		SW846 8260B			6/22/19 02:37	VLM	A
4-Bromofluorobenzene (S)	106		%	79 - 114		SW846 8260B			6/22/19 02:37	VLM	A
Dibromofluoromethane (S)	107		%	78 - 116		SW846 8260B			6/22/19 02:37	VLM	A
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B			6/22/19 02:37	VLM	A



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864002**

Date Collected: 6/12/2019 14:00

Matrix: Water

Sample ID: **MRC-SW7A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	5.3J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 02:59	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 02:59	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:59	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:59	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 02:59	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 02:59	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 02:59	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 02:59	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 02:59	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 02:59	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:59	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:59	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:59	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 02:59	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 02:59	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 02:59	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 02:59	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:59	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:59	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:59	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 02:59	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 02:59	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:59	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 02:59	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:59	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:59	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 02:59	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:59	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 02:59	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864002**

Date Collected: 6/12/2019 14:00

Matrix: Water

Sample ID: **MRC-SW7A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:59	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 02:59	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:59	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 02:59	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 02:59	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 02:59	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:59	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 02:59	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 02:59	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 02:59	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 02:59	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 02:59	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 02:59	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 02:59	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 02:59	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 02:59	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 02:59	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 02:59	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:59	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 02:59	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 02:59	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 02:59	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 02:59	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 02:59	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 02:59	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 02:59	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 02:59	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 02:59	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 02:59	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 02:59	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 02:59	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 02:59	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864002**

Date Collected: 6/12/2019 14:00

Matrix: Water

Sample ID: **MRC-SW7A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 02:59	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 02:59	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B		6/22/19 02:59	VLM	A	
4-Bromofluorobenzene (S)	104		%	79 - 114		SW846 8260B		6/22/19 02:59	VLM	A	
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B		6/22/19 02:59	VLM	A	
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B		6/22/19 02:59	VLM	A	



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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864003**
Sample ID: **MRC-SW9B-S-S061219**

Date Collected: 6/12/2019 13:40 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	6.5J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 03:22	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 03:22	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 03:22	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 03:22	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 03:22	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 03:22	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 03:22	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 03:22	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 03:22	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 03:22	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:22	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 03:22	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:22	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 03:22	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 03:22	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 03:22	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 03:22	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:22	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 03:22	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 03:22	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 03:22	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 03:22	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:22	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 03:22	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 03:22	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 03:22	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 03:22	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 03:22	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 03:22	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864003**
Sample ID: **MRC-SW9B-S-S061219**

Date Collected: 6/12/2019 13:40 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 03:22	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 03:22	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 03:22	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:22	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 03:22	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 03:22	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 03:22	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 03:22	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 03:22	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 03:22	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 03:22	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 03:22	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 03:22	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 03:22	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 03:22	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 03:22	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 03:22	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 03:22	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 03:22	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 03:22	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 03:22	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 03:22	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 03:22	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 03:22	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 03:22	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 03:22	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 03:22	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 03:22	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 03:22	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 03:22	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 03:22	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 03:22	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864003**
 Sample ID: **MRC-SW9B-S-S061219**

Date Collected: 6/12/2019 13:40 Matrix: Water
 Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:22	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 03:22	VLM	A	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	109		%	62 - 133		SW846 8260B			6/22/19 03:22	VLM	A
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B			6/22/19 03:22	VLM	A
Dibromofluoromethane (S)	104		%	78 - 116		SW846 8260B			6/22/19 03:22	VLM	A
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B			6/22/19 03:22	VLM	A



Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864004**

Date Collected: 6/12/2019 13:50

Matrix: Water

Sample ID: **MRC-SW9A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	7.1J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 03:45	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 03:45	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 03:45	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 03:45	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 03:45	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 03:45	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 03:45	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 03:45	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 03:45	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 03:45	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:45	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 03:45	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:45	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 03:45	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 03:45	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 03:45	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 03:45	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:45	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 03:45	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 03:45	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 03:45	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 03:45	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:45	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 03:45	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 03:45	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 03:45	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 03:45	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 03:45	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 03:45	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864004**

Date Collected: 6/12/2019 13:50

Matrix: Water

Sample ID: **MRC-SW9A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 03:45	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 03:45	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 03:45	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 03:45	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 03:45	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 03:45	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 03:45	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 03:45	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 03:45	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 03:45	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 03:45	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 03:45	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 03:45	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 03:45	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 03:45	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 03:45	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 03:45	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 03:45	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 03:45	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 03:45	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 03:45	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 03:45	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 03:45	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 03:45	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 03:45	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 03:45	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 03:45	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 03:45	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 03:45	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 03:45	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 03:45	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 03:45	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864004**

Date Collected: 6/12/2019 13:50

Matrix: Water

Sample ID: **MRC-SW9A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 03:45	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 03:45	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	109		%	62 - 133		SW846 8260B		6/22/19 03:45	VLM	A	
4-Bromofluorobenzene (S)	106		%	79 - 114		SW846 8260B		6/22/19 03:45	VLM	A	
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B		6/22/19 03:45	VLM	A	
Toluene-d8 (S)	106		%	76 - 127		SW846 8260B		6/22/19 03:45	VLM	A	



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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864005**

Date Collected: 6/12/2019 14:10

Matrix: Water

Sample ID: **MRC-SW7B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	7.8J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 04:07	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 04:07	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:07	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:07	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 04:07	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 04:07	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 04:07	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 04:07	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 04:07	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 04:07	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:07	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:07	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:07	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 04:07	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 04:07	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 04:07	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 04:07	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:07	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:07	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:07	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 04:07	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 04:07	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:07	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 04:07	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:07	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:07	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 04:07	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:07	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 04:07	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864005**

Date Collected: 6/12/2019 14:10

Matrix: Water

Sample ID: **MRC-SW7B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:07	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:07	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:07	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:07	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:07	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 04:07	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:07	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 04:07	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 04:07	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:07	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 04:07	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 04:07	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 04:07	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 04:07	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 04:07	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 04:07	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 04:07	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 04:07	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:07	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 04:07	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 04:07	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 04:07	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:07	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 04:07	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 04:07	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 04:07	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 04:07	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:07	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 04:07	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:07	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 04:07	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 04:07	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864005**

Date Collected: 6/12/2019 14:10

Matrix: Water

Sample ID: **MRC-SW7B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:07	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 04:07	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B		6/22/19 04:07	VLM	A	
4-Bromofluorobenzene (S)	104		%	79 - 114		SW846 8260B		6/22/19 04:07	VLM	A	
Dibromofluoromethane (S)	104		%	78 - 116		SW846 8260B		6/22/19 04:07	VLM	A	
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		6/22/19 04:07	VLM	A	



Mrs. Vanessa N Badman

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864006**

Date Collected: 6/12/2019 13:00

Matrix: Water

Sample ID: **MRC-SW6B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	5.7J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 04:30	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 04:30	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:30	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:30	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 04:30	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 04:30	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 04:30	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 04:30	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 04:30	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 04:30	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:30	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:30	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:30	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 04:30	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 04:30	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 04:30	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 04:30	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:30	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:30	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:30	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 04:30	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 04:30	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:30	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 04:30	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:30	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:30	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 04:30	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:30	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 04:30	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864006**

Date Collected: 6/12/2019 13:00

Matrix: Water

Sample ID: **MRC-SW6B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:30	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:30	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:30	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:30	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:30	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 04:30	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:30	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 04:30	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 04:30	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:30	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 04:30	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 04:30	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 04:30	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 04:30	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 04:30	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 04:30	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 04:30	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 04:30	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:30	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 04:30	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 04:30	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 04:30	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:30	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 04:30	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 04:30	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 04:30	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 04:30	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:30	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 04:30	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:30	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 04:30	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 04:30	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864006**

Date Collected: 6/12/2019 13:00

Matrix: Water

Sample ID: **MRC-SW6B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:30	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 04:30	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	110		%	62 - 133		SW846 8260B		6/22/19 04:30	VLM	A	
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B		6/22/19 04:30	VLM	A	
Dibromofluoromethane (S)	107		%	78 - 116		SW846 8260B		6/22/19 04:30	VLM	A	
Toluene-d8 (S)	105		%	76 - 127		SW846 8260B		6/22/19 04:30	VLM	A	
SEMIVOLATILE SIM											
1,4-Dioxane	ND		ug/L	0.098	0.019	8270 SIM	6/19/19 17:50	J1H	6/20/19 11:07	GEC	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
2-Methylnaphthalene-d10 (S)	74.3		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 11:07	GEC	C
Fluoranthene-d10 (S)	83.5		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 11:07	GEC	C



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864007**

Date Collected: 6/12/2019 12:10

Matrix: Water

Sample ID: **MRC-SW8A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	6.5J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 04:53	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 04:53	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:53	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:53	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 04:53	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 04:53	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 04:53	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 04:53	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 04:53	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 04:53	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:53	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:53	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:53	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 04:53	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 04:53	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 04:53	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 04:53	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:53	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:53	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:53	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 04:53	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 04:53	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:53	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 04:53	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:53	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:53	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 04:53	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:53	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 04:53	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864007**

Date Collected: 6/12/2019 12:10

Matrix: Water

Sample ID: **MRC-SW8A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:53	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 04:53	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:53	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 04:53	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 04:53	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 04:53	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:53	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 04:53	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 04:53	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 04:53	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 04:53	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 04:53	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 04:53	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 04:53	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 04:53	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 04:53	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 04:53	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 04:53	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:53	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 04:53	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 04:53	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 04:53	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 04:53	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 04:53	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 04:53	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 04:53	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 04:53	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 04:53	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 04:53	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 04:53	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 04:53	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 04:53	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864007**

Date Collected: 6/12/2019 12:10

Matrix: Water

Sample ID: **MRC-SW8A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 04:53	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 04:53	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	110		%	62 - 133		SW846 8260B		6/22/19 04:53	VLM	A	
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B		6/22/19 04:53	VLM	A	
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B		6/22/19 04:53	VLM	A	
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B		6/22/19 04:53	VLM	A	
SEMIVOLATILE SIM											
1,4-Dioxane	ND		ug/L	0.095	0.018	8270 SIM	6/19/19 17:50	J1H	6/20/19 11:36	GEC	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
2-Methylnaphthalene-d10 (S)	85.1		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 11:36	GEC	C
Fluoranthene-d10 (S)	90.7		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 11:36	GEC	C



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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864008**

Date Collected: 6/12/2019 12:30

Matrix: Water

Sample ID: **MRC-SW8B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	5.6J	J	ug/L	10.0	3.1	SW846 8260B		6/25/19 15:47	DD	B
tert-Amyl methyl ether	ND	22	ug/L	1.0	0.20	SW846 8260B		6/25/19 15:47	DD	B
Benzene	ND	14	ug/L	1.0	0.23	SW846 8260B		6/25/19 15:47	DD	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/25/19 15:47	DD	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/25/19 15:47	DD	B
Bromomethane	0.83J	J,1, 2	ug/L	1.0	0.39	SW846 8260B		6/25/19 15:47	DD	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/25/19 15:47	DD	B
tert-Butyl Alcohol	ND	4,5	ug/L	10.0	2.2	SW846 8260B		6/25/19 15:47	DD	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/25/19 15:47	DD	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/25/19 15:47	DD	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:47	DD	B
Carbon Disulfide	ND	7	ug/L	1.0	0.23	SW846 8260B		6/25/19 15:47	DD	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:47	DD	B
Chlorobenzene	ND	17	ug/L	1.0	0.19	SW846 8260B		6/25/19 15:47	DD	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/25/19 15:47	DD	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
2-Chloroethylvinyl ether	ND	15,1 6	ug/L	2.0	0.38	SW846 8260B		6/25/19 15:47	DD	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/25/19 15:47	DD	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:47	DD	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/25/19 15:47	DD	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
Cyclohexane	ND	13	ug/L	1.0	0.29	SW846 8260B		6/25/19 15:47	DD	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/25/19 15:47	DD	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/25/19 15:47	DD	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:47	DD	B
1,2-Dichlorobenzene	ND	21	ug/L	1.0	0.38	SW846 8260B		6/25/19 15:47	DD	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/25/19 15:47	DD	B
1,4-Dichlorobenzene	ND	20	ug/L	1.0	0.27	SW846 8260B		6/25/19 15:47	DD	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/25/19 15:47	DD	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
1,1-Dichloroethene	ND	3	ug/L	1.0	0.29	SW846 8260B		6/25/19 15:47	DD	B
1,2-Dichloroethene, Total	ND	23	ug/L	2.0	0.45	SW846 8260B		6/25/19 15:47	DD	B

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864008**

Date Collected: 6/12/2019 12:30

Matrix: Water

Sample ID: **MRC-SW8B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
trans-1,2-Dichloroethene	ND	8	ug/L	1.0	0.26	SW846 8260B		6/25/19 15:47	DD	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/25/19 15:47	DD	B
2,2-Dichloropropane	ND	11,1 2	ug/L	1.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/25/19 15:47	DD	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:47	DD	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/25/19 15:47	DD	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/25/19 15:47	DD	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/25/19 15:47	DD	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/25/19 15:47	DD	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/25/19 15:47	DD	B
Freon 113	ND	6	ug/L	1.0	0.26	SW846 8260B		6/25/19 15:47	DD	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/25/19 15:47	DD	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/25/19 15:47	DD	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/25/19 15:47	DD	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/25/19 15:47	DD	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/25/19 15:47	DD	B
Methyl t-Butyl Ether	ND	10,9	ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/25/19 15:47	DD	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/25/19 15:47	DD	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/25/19 15:47	DD	B
n-Propylbenzene	ND	19	ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
Styrene	ND	18	ug/L	1.0	0.24	SW846 8260B		6/25/19 15:47	DD	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/25/19 15:47	DD	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/25/19 15:47	DD	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/25/19 15:47	DD	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/25/19 15:47	DD	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/25/19 15:47	DD	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/25/19 15:47	DD	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/25/19 15:47	DD	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/25/19 15:47	DD	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/25/19 15:47	DD	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/25/19 15:47	DD	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/25/19 15:47	DD	B

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864008**

Date Collected: 6/12/2019 12:30

Matrix: Water

Sample ID: **MRC-SW8B-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/25/19 15:47	DD	B	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/25/19 15:47	DD	B	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:47	DD	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/25/19 15:47	DD	B	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	99		%	62 - 133		SW846 8260B		6/25/19 15:47	DD	B	
4-Bromofluorobenzene (S)	103		%	79 - 114		SW846 8260B		6/25/19 15:47	DD	B	
Dibromofluoromethane (S)	104		%	78 - 116		SW846 8260B		6/25/19 15:47	DD	B	
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		6/25/19 15:47	DD	B	
SEMIVOLATILE SIM											
1,4-Dioxane	ND		ug/L	0.099	0.019	8270 SIM	6/19/19 17:50	J1H	6/20/19 12:04	GEC	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
2-Methylnaphthalene-d10 (S)	84.4		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 12:04	GEC	C
Fluoranthene-d10 (S)	91.7		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 12:04	GEC	C



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864009**

Date Collected: 6/12/2019 12:45

Matrix: Water

Sample ID: **MRC-SW8B-S-DUP-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	9.4J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 05:38	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 05:38	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 05:38	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 05:38	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 05:38	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 05:38	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 05:38	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 05:38	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 05:38	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 05:38	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 05:38	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 05:38	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 05:38	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 05:38	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 05:38	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 05:38	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 05:38	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 05:38	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 05:38	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 05:38	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 05:38	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 05:38	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 05:38	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 05:38	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 05:38	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 05:38	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 05:38	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 05:38	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 05:38	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864009**

Date Collected: 6/12/2019 12:45

Matrix: Water

Sample ID: **MRC-SW8B-S-DUP-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 05:38	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 05:38	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 05:38	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 05:38	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 05:38	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 05:38	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 05:38	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 05:38	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 05:38	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 05:38	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 05:38	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 05:38	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 05:38	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 05:38	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 05:38	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 05:38	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 05:38	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 05:38	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 05:38	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 05:38	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 05:38	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 05:38	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 05:38	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 05:38	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 05:38	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 05:38	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 05:38	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 05:38	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 05:38	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 05:38	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 05:38	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 05:38	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864009**

Date Collected: 6/12/2019 12:45

Matrix: Water

Sample ID: **MRC-SW8B-S-DUP-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 05:38	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 05:38	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	107		%	62 - 133		SW846 8260B		6/22/19 05:38	VLM	A	
4-Bromofluorobenzene (S)	104		%	79 - 114		SW846 8260B		6/22/19 05:38	VLM	A	
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B		6/22/19 05:38	VLM	A	
Toluene-d8 (S)	105		%	76 - 127		SW846 8260B		6/22/19 05:38	VLM	A	
SEMIVOLATILE SIM											
1,4-Dioxane	ND		ug/L	0.096	0.018	8270 SIM	6/19/19 17:50	J1H	6/20/19 13:29	GEC	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
2-Methylnaphthalene-d10 (S)	86.5		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 13:29	GEC	C
Fluoranthene-d10 (S)	91.5		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 13:29	GEC	C



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864010**

Date Collected: 6/12/2019 13:30

Matrix: Water

Sample ID: **MRC-SW6A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	9.0J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 06:00	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 06:00	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 06:00	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 06:00	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 06:00	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 06:00	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 06:00	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 06:00	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 06:00	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 06:00	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:00	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 06:00	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:00	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 06:00	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 06:00	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 06:00	VLM	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/22/19 06:00	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:00	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 06:00	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 06:00	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 06:00	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 06:00	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:00	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 06:00	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 06:00	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 06:00	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 06:00	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 06:00	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 06:00	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864010**

Date Collected: 6/12/2019 13:30

Matrix: Water

Sample ID: **MRC-SW6A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 06:00	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 06:00	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 06:00	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:00	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 06:00	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 06:00	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 06:00	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 06:00	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 06:00	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 06:00	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 06:00	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 06:00	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 06:00	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 06:00	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 06:00	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 06:00	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 06:00	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 06:00	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 06:00	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 06:00	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 06:00	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 06:00	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 06:00	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 06:00	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 06:00	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 06:00	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 06:00	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 06:00	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 06:00	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 06:00	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 06:00	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 06:00	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864010**

Date Collected: 6/12/2019 13:30

Matrix: Water

Sample ID: **MRC-SW6A-S-061219**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:00	VLM	A	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 06:00	VLM	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	110		%	62 - 133		SW846 8260B		6/22/19 06:00	VLM	A	
4-Bromofluorobenzene (S)	107		%	79 - 114		SW846 8260B		6/22/19 06:00	VLM	A	
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B		6/22/19 06:00	VLM	A	
Toluene-d8 (S)	105		%	76 - 127		SW846 8260B		6/22/19 06:00	VLM	A	
SEMIVOLATILE SIM											
1,4-Dioxane	0.022J	J	ug/L	0.098	0.019	8270 SIM	6/19/19 17:50	J1H	6/20/19 13:57	GEC	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
2-Methylnaphthalene-d10 (S)	81.1		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 13:57	GEC	C
Fluoranthene-d10 (S)	87.8		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 13:57	GEC	C



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864011**
Sample ID: **MRC-SW17A-S-061219**

Date Collected: 6/12/2019 15:00 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	9.5J	J	ug/L	10.0	3.1	SW846 8260B		6/22/19 06:23	VLM	A
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/22/19 06:23	VLM	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 06:23	VLM	A
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 06:23	VLM	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/22/19 06:23	VLM	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		6/22/19 06:23	VLM	A
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/22/19 06:23	VLM	A
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/22/19 06:23	VLM	A
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 06:23	VLM	A
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/22/19 06:23	VLM	A
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:23	VLM	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 06:23	VLM	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:23	VLM	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 06:23	VLM	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 06:23	VLM	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/22/19 06:23	VLM	A
Chloroform	0.47J	J	ug/L	1.0	0.21	SW846 8260B		6/22/19 06:23	VLM	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:23	VLM	A
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 06:23	VLM	A
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 06:23	VLM	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/22/19 06:23	VLM	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 06:23	VLM	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:23	VLM	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/22/19 06:23	VLM	A
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 06:23	VLM	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 06:23	VLM	A
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/22/19 06:23	VLM	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 06:23	VLM	A
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/22/19 06:23	VLM	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864011**
Sample ID: **MRC-SW17A-S-061219**

Date Collected: 6/12/2019 15:00 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 06:23	VLM	A
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/22/19 06:23	VLM	A
2,2-Dichloropropane	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 06:23	VLM	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/22/19 06:23	VLM	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/22/19 06:23	VLM	A
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/22/19 06:23	VLM	A
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 06:23	VLM	A
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/22/19 06:23	VLM	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 06:23	VLM	A
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/22/19 06:23	VLM	A
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/22/19 06:23	VLM	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/22/19 06:23	VLM	A
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 06:23	VLM	A
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/22/19 06:23	VLM	A
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 06:23	VLM	A
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/22/19 06:23	VLM	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/22/19 06:23	VLM	A
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/22/19 06:23	VLM	A
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 06:23	VLM	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 06:23	VLM	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/22/19 06:23	VLM	A
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/22/19 06:23	VLM	A
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/22/19 06:23	VLM	A
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/22/19 06:23	VLM	A
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/22/19 06:23	VLM	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/22/19 06:23	VLM	A
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/22/19 06:23	VLM	A
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/22/19 06:23	VLM	A
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/22/19 06:23	VLM	A
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/22/19 06:23	VLM	A
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/22/19 06:23	VLM	A
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/22/19 06:23	VLM	A

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864011**
Sample ID: **MRC-SW17A-S-061219**

Date Collected: 6/12/2019 15:00 Matrix: Water
Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/22/19 06:23	VLM	A
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/22/19 06:23	VLM	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B		6/22/19 06:23	VLM	A
4-Bromofluorobenzene (S)	104		%	79 - 114		SW846 8260B		6/22/19 06:23	VLM	A
Dibromofluoromethane (S)	105		%	78 - 116		SW846 8260B		6/22/19 06:23	VLM	A
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		6/22/19 06:23	VLM	A
SEMIVOLATILE SIM										
1,4-Dioxane	0.057J	J	ug/L	0.094	0.018	8270 SIM	6/19/19 17:50	J1H	6/20/19 14:26	GEC C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Methylnaphthalene-d10 (S)	81.9		%	29 - 112		8270 SIM	6/19/19 17:50	J1H	6/20/19 14:26	GEC C
Fluoranthene-d10 (S)	92.2		%	45 - 130		8270 SIM	6/19/19 17:50	J1H	6/20/19 14:26	GEC C



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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864012**

Date Collected: 6/13/2019 14:00

Matrix: Water

Sample ID: **FB-061319**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.9J	J	ug/L	10.0	3.1	SW846 8260B		6/25/19 15:23	DD	B
tert-Amyl methyl ether	ND		ug/L	1.0	0.20	SW846 8260B		6/25/19 15:23	DD	B
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		6/25/19 15:23	DD	B
Bromobenzene	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:23	DD	B
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:23	DD	B
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		6/25/19 15:23	DD	B
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		6/25/19 15:23	DD	B
Bromomethane	0.63J	J	ug/L	1.0	0.39	SW846 8260B		6/25/19 15:23	DD	B
2-Butanone	ND		ug/L	10.0	1.8	SW846 8260B		6/25/19 15:23	DD	B
tert-Butyl Alcohol	ND		ug/L	10.0	2.2	SW846 8260B		6/25/19 15:23	DD	B
n-Butylbenzene	ND		ug/L	2.0	0.60	SW846 8260B		6/25/19 15:23	DD	B
tert-Butylbenzene	ND		ug/L	2.0	0.44	SW846 8260B		6/25/19 15:23	DD	B
sec-Butylbenzene	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:23	DD	B
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		6/25/19 15:23	DD	B
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:23	DD	B
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		6/25/19 15:23	DD	B
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		6/25/19 15:23	DD	B
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
2-Chloroethylvinyl ether	ND		ug/L	2.0	0.38	SW846 8260B		6/25/19 15:23	DD	B
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		6/25/19 15:23	DD	B
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:23	DD	B
o-Chlorotoluene	ND		ug/L	1.0	0.26	SW846 8260B		6/25/19 15:23	DD	B
p-Chlorotoluene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
Cyclohexane	ND		ug/L	1.0	0.29	SW846 8260B		6/25/19 15:23	DD	B
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	1.5	SW846 8260B		6/25/19 15:23	DD	B
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		6/25/19 15:23	DD	B
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:23	DD	B
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		6/25/19 15:23	DD	B
1,3-Dichlorobenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/25/19 15:23	DD	B
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		6/25/19 15:23	DD	B
Dichlorodifluoromethane	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		6/25/19 15:23	DD	B
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:23	DD	B
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		6/25/19 15:23	DD	B
1,2-Dichloroethene, Total	ND		ug/L	2.0	0.45	SW846 8260B		6/25/19 15:23	DD	B
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:23	DD	B

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864012**

Date Collected: 6/13/2019 14:00

Matrix: Water

Sample ID: **FB-061319**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		6/25/19 15:23	DD	B
1,3-Dichloropropane	ND		ug/L	1.0	0.27	SW846 8260B		6/25/19 15:23	DD	B
2,2-Dichloropropane	ND	1	ug/L	1.0	0.32	SW846 8260B		6/25/19 15:23	DD	B
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		6/25/19 15:23	DD	B
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		6/25/19 15:23	DD	B
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		6/25/19 15:23	DD	B
1,3-Dichloropropene, Total	ND		ug/L	2.0	0.47	SW846 8260B		6/25/19 15:23	DD	B
Diisopropyl ether	ND		ug/L	1.0	0.25	SW846 8260B		6/25/19 15:23	DD	B
Ethyl tert-butyl ether	ND		ug/L	1.0	0.19	SW846 8260B		6/25/19 15:23	DD	B
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		6/25/19 15:23	DD	B
Freon 113	ND		ug/L	1.0	0.26	SW846 8260B		6/25/19 15:23	DD	B
Hexachlorobutadiene	ND		ug/L	5.0	1.0	SW846 8260B		6/25/19 15:23	DD	B
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		6/25/19 15:23	DD	B
Isopropylbenzene	ND		ug/L	1.0	0.22	SW846 8260B		6/25/19 15:23	DD	B
p-Isopropyltoluene	ND		ug/L	1.0	0.32	SW846 8260B		6/25/19 15:23	DD	B
Methyl acetate	ND		ug/L	2.0	0.32	SW846 8260B		6/25/19 15:23	DD	B
Methyl cyclohexane	ND		ug/L	1.0	0.30	SW846 8260B		6/25/19 15:23	DD	B
Methyl t-Butyl Ether	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		6/25/19 15:23	DD	B
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		6/25/19 15:23	DD	B
Naphthalene	ND		ug/L	2.0	0.34	SW846 8260B		6/25/19 15:23	DD	B
n-Propylbenzene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		6/25/19 15:23	DD	B
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		6/25/19 15:23	DD	B
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		6/25/19 15:23	DD	B
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		6/25/19 15:23	DD	B
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		6/25/19 15:23	DD	B
Total Xylenes	ND		ug/L	3.0	0.66	SW846 8260B		6/25/19 15:23	DD	B
1,2,3-Trichlorobenzene	ND		ug/L	2.0	0.93	SW846 8260B		6/25/19 15:23	DD	B
1,2,4-Trichlorobenzene	ND		ug/L	2.0	0.82	SW846 8260B		6/25/19 15:23	DD	B
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		6/25/19 15:23	DD	B
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		6/25/19 15:23	DD	B
1,2,3-Trichloropropane	ND		ug/L	2.0	0.60	SW846 8260B		6/25/19 15:23	DD	B
1,2,4-Trimethylbenzene	ND		ug/L	1.0	0.25	SW846 8260B		6/25/19 15:23	DD	B
Vinyl Acetate	ND		ug/L	5.0	1.6	SW846 8260B		6/25/19 15:23	DD	B
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		6/25/19 15:23	DD	B

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID: **3039864012**

Date Collected: 6/13/2019 14:00

Matrix: Water

Sample ID: **FB-061319**

Date Received: 6/14/2019 08:25

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
o-Xylene	ND		ug/L	1.0	0.33	SW846 8260B		6/25/19 15:23	DD	B	
mp-Xylene	ND		ug/L	2.0	0.52	SW846 8260B		6/25/19 15:23	DD	B	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	97.1		%	62 - 133		SW846 8260B		6/25/19 15:23	DD	B	
4-Bromofluorobenzene (S)	105		%	79 - 114		SW846 8260B		6/25/19 15:23	DD	B	
Dibromofluoromethane (S)	102		%	78 - 116		SW846 8260B		6/25/19 15:23	DD	B	
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		6/25/19 15:23	DD	B	



Mrs. Vanessa N Badman

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3039864008	1	MRC-SW8B-S-061219	SW846 8260B	Bromomethane
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 37.1 and the control limits were 45 to 148.				
3039864008	2	MRC-SW8B-S-061219	SW846 8260B	Bromomethane
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Bromomethane. The RPD was reported as 44.1 and the upper control limit is 26.				
3039864008	3	MRC-SW8B-S-061219	SW846 8260B	1,1-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 134 and the control limits were 63 to 128.				
3039864008	4	MRC-SW8B-S-061219	SW846 8260B	tert-Butyl Alcohol
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte tert-Butyl Alcohol. The % Recovery was reported as 280 and the control limits were 17 to 168.				
3039864008	5	MRC-SW8B-S-061219	SW846 8260B	tert-Butyl Alcohol
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte tert-Butyl Alcohol. The RPD was reported as 60.3 and the upper control limit is 40.				
3039864008	6	MRC-SW8B-S-061219	SW846 8260B	Freon 113
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Freon 113. The % Recovery was reported as 131 and the control limits were 50 to 130.				
3039864008	7	MRC-SW8B-S-061219	SW846 8260B	Carbon Disulfide
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Carbon Disulfide. The % Recovery was reported as 139 and the control limits were 57 to 131.				
3039864008	8	MRC-SW8B-S-061219	SW846 8260B	trans-1,2-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte trans-1,2-Dichloroethene. The % Recovery was reported as 130 and the control limits were 71 to 122.				
3039864008	9	MRC-SW8B-S-061219	SW846 8260B	Methyl t-Butyl Ether
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 123 and the control limits were 69 to 115.				
3039864008	10	MRC-SW8B-S-061219	SW846 8260B	Methyl t-Butyl Ether
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 116 and the control limits were 69 to 115.				
3039864008	11	MRC-SW8B-S-061219	SW846 8260B	2,2-Dichloropropane
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 2,2-Dichloropropane. The % Recovery was reported as 147 and the control limits were 64 to 129.				
3039864008	12	MRC-SW8B-S-061219	SW846 8260B	2,2-Dichloropropane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 2,2-Dichloropropane. The % Recovery was reported as 134 and the control limits were 64 to 129.				
3039864008	13	MRC-SW8B-S-061219	SW846 8260B	Cyclohexane
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Cyclohexane. The % Recovery was reported as 134 and the control limits were 66 to 130.				
3039864008	14	MRC-SW8B-S-061219	SW846 8260B	Benzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Benzene. The % Recovery was reported as 126 and the control limits were 80 to 124.				

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ANALYTICAL RESULTS

Workorder: 3039864 LMC MRC June SWS/95840ACM

3039864008	15	MRC-SW8B-S-061219	SW846 8260B	2-Chloroethylvinyl ether
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 2-Chloroethylvinyl ether. The % Recovery was reported as .59 and the control limits were 1 to 150.				
3039864008	16	MRC-SW8B-S-061219	SW846 8260B	2-Chloroethylvinyl ether
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte 2-Chloroethylvinyl ether. The % Recovery was reported as .84 and the control limits were 1 to 150.				
3039864008	17	MRC-SW8B-S-061219	SW846 8260B	Chlorobenzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Chlorobenzene. The % Recovery was reported as 119 and the control limits were 85 to 117.				
3039864008	18	MRC-SW8B-S-061219	SW846 8260B	Styrene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Styrene. The % Recovery was reported as 124 and the control limits were 79 to 123.				
3039864008	19	MRC-SW8B-S-061219	SW846 8260B	n-Propylbenzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte n-Propylbenzene. The % Recovery was reported as 125 and the control limits were 74 to 122.				
3039864008	20	MRC-SW8B-S-061219	SW846 8260B	1,4-Dichlorobenzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,4-Dichlorobenzene. The % Recovery was reported as 119 and the control limits were 81 to 116.				
3039864008	21	MRC-SW8B-S-061219	SW846 8260B	1,2-Dichlorobenzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,2-Dichlorobenzene. The % Recovery was reported as 120 and the control limits were 82 to 118.				
3039864008	22	MRC-SW8B-S-061219	SW846 8260B	tert-Amyl methyl ether
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte tert-Amyl methyl ether. The % Recovery was reported as 123 and the control limits were 75 to 121.				
3039864008	23	MRC-SW8B-S-061219	SW846 8260B	1,2-Dichloroethene, Total
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,2-Dichloroethene, Total. The % Recovery was reported as 126 and the control limits were 78 to 125.				
3039864012	1	FB-061319	SW846 8260B	2,2-Dichloropropane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 2,2-Dichloropropane. The % Recovery was reported as 134 and the control limits were 64 to 129.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID	Sample ID	Analysis Method	Prep Method
3039864001	MRC-SW16A-S-061219	SW846 8260B	
3039864002	MRC-SW7A-S-061219	SW846 8260B	
3039864003	MRC-SW9B-S-S061219	SW846 8260B	
3039864004	MRC-SW9A-S-061219	SW846 8260B	
3039864005	MRC-SW7B-S-061219	SW846 8260B	
3039864006	MRC-SW6B-S-061219	8270 SIM	SW846 3510C
3039864006	MRC-SW6B-S-061219	SW846 8260B	
3039864007	MRC-SW8A-S-061219	8270 SIM	SW846 3510C
3039864007	MRC-SW8A-S-061219	SW846 8260B	
3039864008	MRC-SW8B-S-061219	8270 SIM	SW846 3510C
3039864008	MRC-SW8B-S-061219	SW846 8260B	
3039864009	MRC-SW8B-S-DUP-061219	8270 SIM	SW846 3510C
3039864009	MRC-SW8B-S-DUP-061219	SW846 8260B	
3039864010	MRC-SW6A-S-061219	8270 SIM	SW846 3510C
3039864010	MRC-SW6A-S-061219	SW846 8260B	
3039864011	MRC-SW17A-S-061219	8270 SIM	SW846 3510C
3039864011	MRC-SW17A-S-061219	SW846 8260B	
3039864012	FB-061319	SW846 8260B	

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

QC Batch: EXTR/56844 **Analysis Method:** 8270 SIM

QC Batch Method: SW846 3510C

Associated Lab Samples: 3039864006, 3039864007, 3039864008, 3039864009, 3039864010, 3039864011

METHOD BLANK: 2966729

Parameter	Blank Result	Units	Reporting Limit
1,4-Dioxane	ND	ug/L	0.10
2-Methylnaphthalene-d10 (S)	86.3	%	29 - 112
Fluoranthene-d10 (S)	100	%	45 - 130

LABORATORY CONTROL SAMPLE: 2966730

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
1,4-Dioxane	51.1	ug/L	1	0.51	22 - 75
2-Methylnaphthalene-d10 (S)	74.2	%			29 - 112
Fluoranthene-d10 (S)	87.5	%			45 - 130

MATRIX SPIKE: 2966731 DUPLICATE: 2966732 ORIGINAL: 3039864008

****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.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
1,4-Dioxane	0	ug/L	.97	.45464	.5018	46.8	51.7	22 - 75	9.86	30
2-Methylnaphthalene-d10 (S)	81	%				81	82	29 - 112		
Fluoranthene-d10 (S)	89.6	%				89.6	88.4	45 - 130		

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

QC Batch: VOMS/51335 **Analysis Method:** SW846 8260B

QC Batch Method: SW846 8260B

Associated Lab Samples: 3039864001, 3039864002, 3039864003, 3039864004, 3039864005, 3039864006, 3039864007, 3039864008, 3039864009, 3039864010, 3039864011, 3039864012

METHOD BLANK: 2968376

Parameter	Blank Result	Units	Reporting Limit
Acetone	ND	ug/L	10.0
tert-Amyl methyl ether	ND	ug/L	1.0
Benzene	ND	ug/L	1.0
Bromobenzene	ND	ug/L	1.0
Bromochloromethane	ND	ug/L	1.0
Bromodichloromethane	ND	ug/L	1.0
Bromoform	ND	ug/L	1.0
Bromomethane	ND	ug/L	1.0
2-Butanone	ND	ug/L	10.0
tert-Butyl Alcohol	ND	ug/L	10.0
n-Butylbenzene	ND	ug/L	2.0
tert-Butylbenzene	ND	ug/L	2.0
sec-Butylbenzene	ND	ug/L	1.0
Carbon Disulfide	ND	ug/L	1.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chlorodibromomethane	ND	ug/L	1.0
Chloroethane	ND	ug/L	1.0
2-Chloroethylvinyl ether	ND	ug/L	2.0
Chloroform	ND	ug/L	1.0
Chloromethane	ND	ug/L	1.0
o-Chlorotoluene	ND	ug/L	1.0
p-Chlorotoluene	ND	ug/L	1.0
Cyclohexane	ND	ug/L	1.0
1,2-Dibromo-3-chloropropane	ND	ug/L	7.0
1,2-Dibromoethane	ND	ug/L	1.0
Dibromomethane	ND	ug/L	1.0
1,2-Dichlorobenzene	ND	ug/L	1.0
1,3-Dichlorobenzene	ND	ug/L	1.0
1,4-Dichlorobenzene	ND	ug/L	1.0
Dichlorodifluoromethane	ND	ug/L	1.0
1,1-Dichloroethane	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
1,2-Dichloroethene, Total	ND	ug/L	2.0
cis-1,2-Dichloroethene	ND	ug/L	1.0
trans-1,2-Dichloroethene	ND	ug/L	1.0

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

1,3-Dichloropropane	ND	ug/L	1.0
2,2-Dichloropropane	ND	ug/L	1.0
1,2-Dichloropropane	ND	ug/L	1.0
cis-1,3-Dichloropropene	ND	ug/L	1.0
trans-1,3-Dichloropropene	ND	ug/L	1.0
1,3-Dichloropropene, Total	ND	ug/L	2.0
Diisopropyl ether	ND	ug/L	1.0
Ethyl tert-butyl ether	ND	ug/L	1.0
Ethylbenzene	ND	ug/L	1.0
Freon 113	ND	ug/L	1.0
Hexachlorobutadiene	ND	ug/L	5.0
2-Hexanone	ND	ug/L	5.0
Isopropylbenzene	ND	ug/L	1.0
p-Isopropyltoluene	ND	ug/L	1.0
Methyl acetate	ND	ug/L	2.0
Methyl cyclohexane	ND	ug/L	1.0
Methyl t-Butyl Ether	ND	ug/L	1.0
4-Methyl-2-Pentanone(MIBK)	ND	ug/L	5.0
Methylene Chloride	ND	ug/L	1.0
Naphthalene	ND	ug/L	2.0
n-Propylbenzene	ND	ug/L	1.0
Styrene	ND	ug/L	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Toluene	ND	ug/L	1.0
Total Xylenes	ND	ug/L	3.0
1,2,3-Trichlorobenzene	ND	ug/L	2.0
1,2,4-Trichlorobenzene	ND	ug/L	2.0
1,1,1-Trichloroethane	ND	ug/L	1.0
1,1,2-Trichloroethane	ND	ug/L	1.0
Trichloroethene	0.62J	ug/L	1.0
Trichlorofluoromethane	ND	ug/L	1.0
1,2,3-Trichloropropane	ND	ug/L	2.0
1,2,4-Trimethylbenzene	ND	ug/L	1.0
Vinyl Acetate	ND	ug/L	5.0
Vinyl Chloride	ND	ug/L	1.0
o-Xylene	ND	ug/L	1.0
mp-Xylene	ND	ug/L	2.0
1,2-Dichloroethane-d4 (S)	109	%	62 - 133
4-Bromofluorobenzene (S)	105	%	79 - 114
Dibromofluoromethane (S)	105	%	78 - 116
Toluene-d8 (S)	105	%	76 - 127

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

LABORATORY CONTROL SAMPLE: 2968377

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Acetone	90.4	ug/L	100	90.4	40 - 151
tert-Amyl methyl ether	107	ug/L	20	21.4	75 - 121
Benzene	103	ug/L	20	20.5	80 - 124
Bromobenzene	105	ug/L	20	21.0	81 - 119
Bromochloromethane	110	ug/L	20	21.9	73 - 117
Bromodichloromethane	105	ug/L	20	21.0	79 - 126
Bromoform	98.6	ug/L	20	19.7	70 - 123
Bromomethane	97.7	ug/L	20	19.5	45 - 148
2-Butanone	91.3	ug/L	100	91.3	50 - 152
tert-Butyl Alcohol	79	ug/L	100	79.0	17 - 168
n-Butylbenzene	110	ug/L	20	22.1	71 - 130
tert-Butylbenzene	105	ug/L	20	21.0	72 - 124
sec-Butylbenzene	108	ug/L	20	21.6	72 - 127
Carbon Disulfide	105	ug/L	20	21.0	57 - 131
Carbon Tetrachloride	110	ug/L	20	22.1	62 - 132
Chlorobenzene	104	ug/L	20	20.8	85 - 117
Chlorodibromomethane	108	ug/L	20	21.6	77 - 122
Chloroethane	99.5	ug/L	20	19.9	51 - 142
2-Chloroethylvinyl ether	93	ug/L	20	18.6	1 - 150
Chloroform	102	ug/L	20	20.5	78 - 122
Chloromethane	94.1	ug/L	20	18.8	38 - 156
o-Chlorotoluene	101	ug/L	20	20.1	78 - 126
p-Chlorotoluene	101	ug/L	20	20.3	78 - 125
Cyclohexane	109	ug/L	20	21.8	66 - 130
1,2-Dibromo-3-chloropropane	95.5	ug/L	20	19.1	59 - 133
1,2-Dibromoethane	106	ug/L	20	21.2	80 - 124
Dibromomethane	107	ug/L	20	21.4	81 - 125
1,2-Dichlorobenzene	104	ug/L	20	20.7	82 - 118
1,3-Dichlorobenzene	102	ug/L	20	20.5	81 - 118
1,4-Dichlorobenzene	104	ug/L	20	20.7	81 - 116
Dichlorodifluoromethane	106	ug/L	20	21.3	17 - 166
1,1-Dichloroethane	97.9	ug/L	20	19.6	78 - 124
1,2-Dichloroethane	100	ug/L	20	20.0	70 - 133
1,1-Dichloroethene	103	ug/L	20	20.5	63 - 128
1,2-Dichloroethene, Total	100	ug/L	40	40.0	78 - 125
cis-1,2-Dichloroethene	98.2	ug/L	20	19.6	78 - 125
trans-1,2-Dichloroethene	102	ug/L	20	20.4	71 - 122
1,3-Dichloropropane	99.2	ug/L	20	19.8	82 - 126
2,2-Dichloropropane	103	ug/L	20	20.6	64 - 129
1,2-Dichloropropane	98.2	ug/L	20	19.6	81 - 127
cis-1,3-Dichloropropene	102	ug/L	20	20.4	81 - 121
trans-1,3-Dichloropropene	103	ug/L	20	20.6	78 - 126

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

1,3-Dichloropropene, Total	102	ug/L	40	41.0	80 - 123
Diisopropyl ether	95.4	ug/L	20	19.1	74 - 131
Ethyl tert-butyl ether	100	ug/L	20	20.0	75 - 123
Ethylbenzene	103	ug/L	20	20.7	80 - 124
Freon 113	108	ug/L	20	21.6	50 - 130
Hexachlorobutadiene	125	ug/L	20	24.9	55 - 128
2-Hexanone	90	ug/L	100	90.0	65 - 154
Isopropylbenzene	107	ug/L	20	21.4	73 - 129
p-Isopropyltoluene	110	ug/L	20	21.9	72 - 123
Methyl acetate	91.6	ug/L	20	18.3	70 - 130
Methyl cyclohexane	106	ug/L	20	21.1	70 - 130
Methyl t-Butyl Ether	103	ug/L	20	20.7	69 - 115
4-Methyl-2-Pentanone(MIBK)	89.3	ug/L	100	89.3	71 - 146
Methylene Chloride	103	ug/L	20	20.6	76 - 121
Naphthalene	103	ug/L	20	20.5	56 - 134
n-Propylbenzene	104	ug/L	20	20.8	74 - 122
Styrene	104	ug/L	20	20.8	79 - 123
1,1,1,2-Tetrachloroethane	109	ug/L	20	21.7	78 - 121
1,1,2,2-Tetrachloroethane	99.1	ug/L	20	19.8	74 - 135
Tetrachloroethene	107	ug/L	20	21.3	72 - 124
Toluene	102	ug/L	20	20.4	80 - 125
Total Xylenes	104	ug/L	60	62.6	79 - 125
1,2,3-Trichlorobenzene	104	ug/L	20	20.7	61 - 126
1,2,4-Trichlorobenzene	109	ug/L	20	21.9	67 - 123
1,1,1-Trichloroethane	107	ug/L	20	21.5	66 - 130
1,1,2-Trichloroethane	98.8	ug/L	20	19.8	82 - 126
Trichloroethene	103	ug/L	20	20.6	77 - 124
Trichlorofluoromethane	118	ug/L	20	23.5	38 - 123
1,2,3-Trichloropropane	103	ug/L	20	20.7	75 - 132
1,2,4-Trimethylbenzene	104	ug/L	20	20.8	76 - 125
Vinyl Acetate	98.2	ug/L	20	19.6	58 - 136
Vinyl Chloride	97.9	ug/L	20	19.6	27 - 138
o-Xylene	104	ug/L	20	20.7	79 - 124
mp-Xylene	105	ug/L	40	41.9	79 - 125
1,2-Dichloroethane-d4 (S)	105	%			62 - 133
4-Bromofluorobenzene (S)	108	%			79 - 114
Dibromofluoromethane (S)	108	%			78 - 116
Toluene-d8 (S)	103	%			76 - 127

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

QC Batch: VOMS/51370 **Analysis Method:** SW846 8260B

QC Batch Method: SW846 8260B

Associated Lab Samples: 3039864008, 3039864012

METHOD BLANK: 2969611

Parameter	Blank Result	Units	Reporting Limit
Acetone	ND	ug/L	10.0
tert-Amyl methyl ether	ND	ug/L	1.0
Benzene	ND	ug/L	1.0
Bromobenzene	ND	ug/L	1.0
Bromochloromethane	ND	ug/L	1.0
Bromodichloromethane	ND	ug/L	1.0
Bromoform	ND	ug/L	1.0
Bromomethane	0.72J	ug/L	1.0
2-Butanone	ND	ug/L	10.0
tert-Butyl Alcohol	ND	ug/L	10.0
n-Butylbenzene	ND	ug/L	2.0
tert-Butylbenzene	ND	ug/L	2.0
sec-Butylbenzene	ND	ug/L	1.0
Carbon Disulfide	ND	ug/L	1.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chlorodibromomethane	ND	ug/L	1.0
Chloroethane	ND	ug/L	1.0
2-Chloroethylvinyl ether	ND	ug/L	2.0
Chloroform	ND	ug/L	1.0
Chloromethane	ND	ug/L	1.0
o-Chlorotoluene	ND	ug/L	1.0
p-Chlorotoluene	ND	ug/L	1.0
Cyclohexane	ND	ug/L	1.0
1,2-Dibromo-3-chloropropane	ND	ug/L	7.0
1,2-Dibromoethane	ND	ug/L	1.0
Dibromomethane	ND	ug/L	1.0
1,2-Dichlorobenzene	ND	ug/L	1.0
1,3-Dichlorobenzene	ND	ug/L	1.0
1,4-Dichlorobenzene	ND	ug/L	1.0
Dichlorodifluoromethane	ND	ug/L	1.0
1,1-Dichloroethane	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
1,2-Dichloroethene, Total	ND	ug/L	2.0
cis-1,2-Dichloroethene	ND	ug/L	1.0
trans-1,2-Dichloroethene	ND	ug/L	1.0

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

1,3-Dichloropropane	ND	ug/L	1.0
2,2-Dichloropropane	ND	ug/L	1.0
1,2-Dichloropropane	ND	ug/L	1.0
cis-1,3-Dichloropropene	ND	ug/L	1.0
trans-1,3-Dichloropropene	ND	ug/L	1.0
1,3-Dichloropropene, Total	ND	ug/L	2.0
Diisopropyl ether	ND	ug/L	1.0
Ethyl tert-butyl ether	ND	ug/L	1.0
Ethylbenzene	ND	ug/L	1.0
Freon 113	ND	ug/L	1.0
Hexachlorobutadiene	ND	ug/L	5.0
2-Hexanone	ND	ug/L	5.0
Isopropylbenzene	ND	ug/L	1.0
p-Isopropyltoluene	ND	ug/L	1.0
Methyl acetate	ND	ug/L	2.0
Methyl cyclohexane	ND	ug/L	1.0
Methyl t-Butyl Ether	ND	ug/L	1.0
4-Methyl-2-Pentanone(MIBK)	ND	ug/L	5.0
Methylene Chloride	ND	ug/L	1.0
Naphthalene	ND	ug/L	2.0
n-Propylbenzene	ND	ug/L	1.0
Styrene	ND	ug/L	1.0
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Toluene	ND	ug/L	1.0
Total Xylenes	ND	ug/L	3.0
1,2,3-Trichlorobenzene	ND	ug/L	2.0
1,2,4-Trichlorobenzene	ND	ug/L	2.0
1,1,1-Trichloroethane	ND	ug/L	1.0
1,1,2-Trichloroethane	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Trichlorofluoromethane	ND	ug/L	1.0
1,2,3-Trichloropropane	ND	ug/L	2.0
1,2,4-Trimethylbenzene	ND	ug/L	1.0
Vinyl Acetate	ND	ug/L	5.0
Vinyl Chloride	ND	ug/L	1.0
o-Xylene	ND	ug/L	1.0
mp-Xylene	ND	ug/L	2.0
1,2-Dichloroethane-d4 (S)	97.9	%	62 - 133
4-Bromofluorobenzene (S)	107	%	79 - 114
Dibromofluoromethane (S)	102	%	78 - 116
Toluene-d8 (S)	103	%	76 - 127

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

LABORATORY CONTROL SAMPLE: 2969612

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Acetone	115	ug/L	100	115	40 - 151
tert-Amyl methyl ether	116	ug/L	20	23.2	75 - 121
Benzene	113	ug/L	20	22.7	80 - 124
Bromobenzene	112	ug/L	20	22.4	81 - 119
Bromochloromethane	101	ug/L	20	20.2	73 - 117
Bromodichloromethane	111	ug/L	20	22.3	79 - 126
Bromoform	116	ug/L	20	23.3	70 - 123
Bromomethane	86.8	ug/L	20	17.4	45 - 148
2-Butanone	114	ug/L	100	114	50 - 152
tert-Butyl Alcohol	116	ug/L	100	116	17 - 168
n-Butylbenzene	112	ug/L	20	22.5	71 - 130
tert-Butylbenzene	111	ug/L	20	22.3	72 - 124
sec-Butylbenzene	115	ug/L	20	23.0	72 - 127
Carbon Disulfide	117	ug/L	20	23.4	57 - 131
Carbon Tetrachloride	110	ug/L	20	22.0	62 - 132
Chlorobenzene	112	ug/L	20	22.5	85 - 117
Chlorodibromomethane	114	ug/L	20	22.8	77 - 122
Chloroethane	104	ug/L	20	20.7	51 - 142
2-Chloroethylvinyl ether	116	ug/L	20	23.2	1 - 150
Chloroform	109	ug/L	20	21.8	78 - 122
Chloromethane	104	ug/L	20	20.8	38 - 156
o-Chlorotoluene	113	ug/L	20	22.5	78 - 126
p-Chlorotoluene	113	ug/L	20	22.6	78 - 125
Cyclohexane	118	ug/L	20	23.5	66 - 130
1,2-Dibromo-3-chloropropane	115	ug/L	20	23.0	59 - 133
1,2-Dibromoethane	114	ug/L	20	22.8	80 - 124
Dibromomethane	113	ug/L	20	22.6	81 - 125
1,2-Dichlorobenzene	112	ug/L	20	22.3	82 - 118
1,3-Dichlorobenzene	111	ug/L	20	22.1	81 - 118
1,4-Dichlorobenzene	110	ug/L	20	22.0	81 - 116
Dichlorodifluoromethane	105	ug/L	20	21.1	17 - 166
1,1-Dichloroethane	108	ug/L	20	21.6	78 - 124
1,2-Dichloroethane	108	ug/L	20	21.6	70 - 133
1,1-Dichloroethene	118	ug/L	20	23.5	63 - 128
1,2-Dichloroethene, Total	113	ug/L	40	45.1	78 - 125
cis-1,2-Dichloroethene	110	ug/L	20	21.9	78 - 125
trans-1,2-Dichloroethene	116	ug/L	20	23.1	71 - 122
1,3-Dichloropropane	113	ug/L	20	22.6	82 - 126
2,2-Dichloropropane	134*	ug/L	20	26.9	64 - 129
1,2-Dichloropropane	113	ug/L	20	22.6	81 - 127
cis-1,3-Dichloropropene	117	ug/L	20	23.5	81 - 121
trans-1,3-Dichloropropene	116	ug/L	20	23.2	78 - 126

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

1,3-Dichloropropene, Total	117	ug/L	40	46.6	80 - 123
Diisopropyl ether	115	ug/L	20	23.1	74 - 131
Ethyl tert-butyl ether	112	ug/L	20	22.5	75 - 123
Ethylbenzene	113	ug/L	20	22.6	80 - 124
Freon 113	115	ug/L	20	23.1	50 - 130
Hexachlorobutadiene	104	ug/L	20	20.8	55 - 128
2-Hexanone	125	ug/L	100	125	65 - 154
Isopropylbenzene	116	ug/L	20	23.3	73 - 129
p-Isopropyltoluene	114	ug/L	20	22.8	72 - 123
Methyl acetate	106	ug/L	20	21.2	70 - 130
Methyl cyclohexane	116	ug/L	20	23.2	70 - 130
Methyl t-Butyl Ether	114	ug/L	20	22.8	69 - 115
4-Methyl-2-Pentanone(MIBK)	123	ug/L	100	123	71 - 146
Methylene Chloride	101	ug/L	20	20.1	76 - 121
Naphthalene	116	ug/L	20	23.3	56 - 134
n-Propylbenzene	113	ug/L	20	22.7	74 - 122
Styrene	114	ug/L	20	22.9	79 - 123
1,1,1,2-Tetrachloroethane	112	ug/L	20	22.5	78 - 121
1,1,2,2-Tetrachloroethane	118	ug/L	20	23.6	74 - 135
Tetrachloroethene	107	ug/L	20	21.5	72 - 124
Toluene	111	ug/L	20	22.3	80 - 125
Total Xylenes	113	ug/L	60	68.1	79 - 125
1,2,3-Trichlorobenzene	111	ug/L	20	22.1	61 - 126
1,2,4-Trichlorobenzene	112	ug/L	20	22.4	67 - 123
1,1,1-Trichloroethane	110	ug/L	20	22.1	66 - 130
1,1,2-Trichloroethane	112	ug/L	20	22.4	82 - 126
Trichloroethene	108	ug/L	20	21.7	77 - 124
Trichlorofluoromethane	115	ug/L	20	23.0	38 - 123
1,2,3-Trichloropropane	118	ug/L	20	23.6	75 - 132
1,2,4-Trimethylbenzene	111	ug/L	20	22.2	76 - 125
Vinyl Acetate	116	ug/L	20	23.1	58 - 136
Vinyl Chloride	110	ug/L	20	22.0	27 - 138
o-Xylene	111	ug/L	20	22.2	79 - 124
mp-Xylene	115	ug/L	40	45.9	79 - 125
1,2-Dichloroethane-d4 (S)	98.1	%			62 - 133
4-Bromofluorobenzene (S)	104	%			79 - 114
Dibromofluoromethane (S)	103	%			78 - 116
Toluene-d8 (S)	105	%			76 - 127

MATRIX SPIKE: 2969903 DUPLICATE: 2969904 ORIGINAL: 3039864008

****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.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

Acetone	5.59679	ug/L	100	119.806	120.973	114	115	40 - 151	.97	40
tert-Amyl methyl ether	0	ug/L	20	24.5619	23.1013	123*	116	75 - 121	6.13	40
Benzene	0	ug/L	20	25.28	22.8169	126*	114	80 - 124	10.2	26
Bromobenzene	0	ug/L	20	23.7422	21.3633	119	107	81 - 119	10.5	17
Bromochloromethane	0	ug/L	20	22.6703	21.7066	113	109	73 - 117	4.34	19
Bromodichloromethane	0	ug/L	20	23.6933	21.8945	118	109	79 - 126	7.89	16
Bromoform	0	ug/L	20	22.5879	21.4433	113	107	70 - 123	5.2	16
Bromomethane	.82818	ug/L	20	8.2539	12.9264	37.1*	60.5	45 - 148	44.1	26
2-Butanone	0	ug/L	100	119.444	116.537	119	117	50 - 152	2.46	16
tert-Butyl Alcohol	0	ug/L	100	280.135	150.288	280*	150	17 - 168	60.3	40
n-Butylbenzene	0	ug/L	20	25.2334	23.8522	126	119	71 - 130	5.63	20
tert-Butylbenzene	0	ug/L	20	24.0522	22.4734	120	112	72 - 124	6.79	17
sec-Butylbenzene	0	ug/L	20	24.882	23.5065	124	118	72 - 127	5.69	17
Carbon Disulfide	0	ug/L	20	27.7759	23.9606	139*	120	57 - 131	14.7	28
Carbon Tetrachloride	0	ug/L	20	24.9551	22.1282	125	111	62 - 132	12	17
Chlorobenzene	0	ug/L	20	23.8961	22.2211	119*	111	85 - 117	7.26	15
Chlorodibromomethane	0	ug/L	20	23.4723	21.7747	117	109	77 - 122	7.5	15
Chloroethane	0	ug/L	20	21.7651	19.412	109	97.1	51 - 142	11.4	24
2-Chloroethylvinyl ether	0	ug/L	20	.11809	.16783	.59*	.84*	1 - 150	34.8	40
Chloroform	0	ug/L	20	23.6018	21.5233	118	108	78 - 122	9.21	16
Chloromethane	0	ug/L	20	21.2142	19.9869	106	99.9	38 - 156	5.96	27
o-Chlorotoluene	0	ug/L	20	23.8569	21.7815	119	109	78 - 126	9.09	17
p-Chlorotoluene	0	ug/L	20	24.1429	21.8532	121	109	78 - 125	9.96	16
Cyclohexane	0	ug/L	20	26.8645	23.9781	134*	120	66 - 130	11.4	20
1,2-Dibromo-3-chloropropane	0	ug/L	20	22.8483	21.8009	114	109	59 - 133	4.69	26
1,2-Dibromoethane	0	ug/L	20	23.4914	22.4523	117	112	80 - 124	4.52	19
Dibromomethane	0	ug/L	20	24.545	22.7898	123	114	81 - 125	7.42	16
1,2-Dichlorobenzene	0	ug/L	20	24.0455	22.1589	120*	111	82 - 118	8.17	15
1,3-Dichlorobenzene	0	ug/L	20	23.6804	21.6535	118	108	81 - 118	8.94	16
1,4-Dichlorobenzene	0	ug/L	20	23.7898	21.5804	119*	108	81 - 116	9.74	15
Dichlorodifluoromethane	0	ug/L	20	22.2271	19.8685	111	99.3	17 - 166	11.2	24
1,1-Dichloroethane	0	ug/L	20	23.9864	21.7123	120	109	78 - 124	9.95	15
1,2-Dichloroethane	0	ug/L	20	23.2779	21.3661	116	107	70 - 133	8.56	19
1,1-Dichloroethene	0	ug/L	20	26.7564	23.6329	134*	118	63 - 128	12.4	21
1,2-Dichloroethene, Total	0	ug/L	40	50.3194	45.2757	126*	113	78 - 125	10.6	40
cis-1,2-Dichloroethene	0	ug/L	20	24.3241	22.1757	122	111	78 - 125	9.24	21
trans-1,2-Dichloroethene	0	ug/L	20	25.9953	23.1001	130*	116	71 - 122	11.8	22
1,3-Dichloropropane	0	ug/L	20	23.7517	22.4929	119	112	82 - 126	5.44	15
2,2-Dichloropropane	0	ug/L	20	29.3046	25.7368	147*	129	64 - 129	13	18
1,2-Dichloropropane	0	ug/L	20	24.3496	22.491	122	112	81 - 127	7.94	15
cis-1,3-Dichloropropene	0	ug/L	20	24.0935	22.8853	120	114	81 - 121	5.14	16
trans-1,3-Dichloropropene	0	ug/L	20	24.1752	22.763	121	114	78 - 126	6.02	18
1,3-Dichloropropene, Total	0	ug/L	40	48.2688	45.6483	121	114	80 - 123	5.58	16
Diisopropyl ether	0	ug/L	20	24.8639	22.8283	124	114	74 - 131	8.54	15
Ethyl tert-butyl ether	0	ug/L	20	24.1228	22.3443	121	112	75 - 123	7.65	16
Ethylbenzene	0	ug/L	20	24.3637	22.3924	122	112	80 - 124	8.43	19

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QUALITY CONTROL DATA

Workorder: 3039864 LMC MRC June SWS/95840ACM

Freon 113	0	ug/L	20	26.1059	23.4209	131*	117	50 - 130	10.8	26
Hexachlorobutadiene	0	ug/L	20	22.7789	21.8591	114	109	55 - 128	4.12	35
2-Hexanone	0	ug/L	100	124.371	124.761	124	125	65 - 154	.31	17
Isopropylbenzene	0	ug/L	20	25.11	22.7085	126	114	73 - 129	10	18
p-Isopropyltoluene	0	ug/L	20	24.6311	23.1918	123	116	72 - 123	6.02	17
Methyl acetate	0	ug/L	20	18.5987	19.836	93	99.2	70 - 130	6.44	18
Methyl cyclohexane	0	ug/L	20	25.8529	24.7634	129	124	70 - 130	4.3	18
Methyl t-Butyl Ether	0	ug/L	20	24.5534	23.1242	123*	116*	69 - 115	6	20
4-Methyl-2-Pentanone(MIBK)	0	ug/L	100	127.471	120.969	127	121	71 - 146	5.23	16
Methylene Chloride	0	ug/L	20	22.9452	21.1079	115	106	76 - 121	8.34	17
Naphthalene	0	ug/L	20	23.9324	23.1206	120	116	56 - 134	3.45	40
n-Propylbenzene	0	ug/L	20	24.9834	22.6288	125*	113	74 - 122	9.89	20
Styrene	0	ug/L	20	24.7846	22.4134	124*	112	79 - 123	10	16
1,1,1,2-Tetrachloroethane	0	ug/L	20	23.7379	22.5916	119	113	78 - 121	4.95	16
1,1,2,2-Tetrachloroethane	0	ug/L	20	24.3461	22.881	122	114	74 - 135	6.2	16
Tetrachloroethene	0	ug/L	20	21.5724	19.8699	108	99.3	72 - 124	8.22	38
Toluene	0	ug/L	20	23.9523	22.4647	120	112	80 - 125	6.41	20
Total Xylenes	0	ug/L	60	72.7722	67.5073	121	113	79 - 125	7.51	35
1,2,3-Trichlorobenzene	0	ug/L	20	22.8971	22.3363	114	112	61 - 126	2.48	36
1,2,4-Trichlorobenzene	0	ug/L	20	23.8232	22.4679	119	112	67 - 123	5.86	22
1,1,1-Trichloroethane	0	ug/L	20	24.5076	21.7494	123	109	66 - 130	11.9	20
1,1,2-Trichloroethane	0	ug/L	20	23.1226	21.8809	116	109	82 - 126	5.52	15
Trichloroethene	0	ug/L	20	23.5261	21.2815	118	106	77 - 124	10	18
Trichlorofluoromethane	0	ug/L	20	23.6794	21.1175	118	106	38 - 123	11.4	23
1,2,3-Trichloropropane	0	ug/L	20	24.1129	23.1239	121	116	75 - 132	4.19	19
1,2,4-Trimethylbenzene	0	ug/L	20	23.9725	22.002	120	110	76 - 125	8.57	24
Vinyl Acetate	0	ug/L	20	22.8879	21.9562	114	110	58 - 136	4.16	17
Vinyl Chloride	0	ug/L	20	22.3058	20.5688	112	103	27 - 138	8.1	40
o-Xylene	0	ug/L	20	23.7843	22.1048	119	111	79 - 124	7.32	19
mp-Xylene	0	ug/L	40	48.9878	45.4025	122	114	79 - 125	7.6	21
1,2-Dichloroethane-d4 (S)	98.6	%				98.6	95.3	62 - 133		
4-Bromofluorobenzene (S)	105	%				105	104	79 - 114		
Dibromofluoromethane (S)	105	%				105	101	78 - 116		
Toluene-d8 (S)	104	%				104	105	76 - 127		

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Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

QUALITY CONTROL DATA QUALIFIERS

Workorder: 3039864 LMC MRC June SWS/95840ACM

QUALITY CONTROL PARAMETER QUALIFIERS

Lab ID	#	Sample Type	Analytical Method	Analyte
2969612	1	Lab Control Standard	SW846 8260B	2,2-Dichloropropane

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 2,2-Dichloropropane. The % Recovery was reported as 134 and the control limits were 64 to 129.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3039864 LMC MRC June SWS/95840ACM

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3039864006	MRC-SW6B-S-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039864007	MRC-SW8A-S-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039864008	MRC-SW8B-S-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039864009	MRC-SW8B-S-DUP-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039864010	MRC-SW6A-S-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039864011	MRC-SW17A-S-061219	SW846 3510C	EXTR/56844	8270 SIM	SVMS/33402
3039864001	MRC-SW16A-S-061219			SW846 8260B	VOMS/51335
3039864002	MRC-SW7A-S-061219			SW846 8260B	VOMS/51335
3039864003	MRC-SW9B-S-061219			SW846 8260B	VOMS/51335
3039864004	MRC-SW9A-S-061219			SW846 8260B	VOMS/51335
3039864005	MRC-SW7B-S-061219			SW846 8260B	VOMS/51335
3039864006	MRC-SW6B-S-061219			SW846 8260B	VOMS/51335
3039864007	MRC-SW8A-S-061219			SW846 8260B	VOMS/51335
3039864009	MRC-SW8B-S-DUP-061219			SW846 8260B	VOMS/51335
3039864010	MRC-SW6A-S-061219			SW846 8260B	VOMS/51335
3039864011	MRC-SW17A-S-061219			SW846 8260B	VOMS/51335
3039864008	MRC-SW8B-S-061219			SW846 8260B	VOMS/51370
3039864012	FB-061319			SW846 8260B	VOMS/51370

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34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430



**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS**
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

Client Name: AECOM		Container Type	CG	AG		
Address: 12420 Milestone Center Drive, Suite 150		Container Size	40mL	1L		
German town, MD 20876		Preservatives	HCl			
Contact: Ravi Damara & Holly Brown		ANALYSES/METHOD REQUESTED				
Phone#: 301-674-3199		Enter Number of Containers Per Sample or Field Results Below.				
Project Name#: LMC MRC June SWS / 95840ACM		1,4-Dioxane (8270D SIM)				
Bill To: Ravi Damara		VOCs (8260C)				
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days.		*Matrix				
<input type="checkbox"/> Rush-Subject to ALS approval and surcharges.		G or C				
Date Required: Approved?		Sample Date	Sample Time			
Email? <input checked="" type="checkbox"/> -Y ravi.damara@aecom.com		MRC-SW16A-S-061219	6/12/2019	1150	G	2
Fax? <input type="checkbox"/> -Y No.		MRC-SW7A-S-061219	6/12/2019	1400	G	2
		MRC-SW9B-S-061219	6/12/2019	1340	G	2
		MRC-SW9A-S-061219	6/12/2019	1350	G	2
		MRC-SW7B-S-061219	6/12/2019	1410	G	2
		MRC-SW6B-S-061219	6/12/2019	1300	G	2
		MRC-SW8A-S-061219	6/12/2019	1210	G	2
		MRC-SW8B-S-061219	6/12/2019	1230	G	6
		MRC-SW8B-S-DUP-061219	6/12/2019	1245	G	2
		MRC-SW6A-S-061219	6/12/2019	1330	G	2
Project Comments: Please also email data to holly.brown@aecom.com and nao.um.tavarizis@aecom.com		LOGGED BY (signature):				
		REVIEWED BY (signature):				
Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time	
1 <i>Ravi Damara</i> / AECOM	6/13/2019	1453	2 <i>Holly Brown</i>	6/13	1453	
3 <i>Ravi Damara</i>	6/13		4 COMMON COURIER / ALS COURIER	6/19	825	
5 COMMON COURIER / ALS COURIER			6 <i>Steve</i>			
7			8			
9			10			

COC #: **1**
ALS Q: **2**

* 3 0 3 9 8 6 4 * (Lab)
Cooler Temp: **2** Therm ID: **401**
No. of Coolers: Y N Initial

Custody Seals Present?
(if present) Seals Intact?
Received on Ice?
COC Labels Complete/Accurate?
Cont. in Good Cond.?
Correct Containers?
Correct Sample Volumes?
Correct Preservation?
Headspace/Volatiles?

Courier/Tracking #: _____
Sample/COC Comments

Extra Volume for MS/MSD _____
ALS Field Services: Pickup Labor
 Composite Sampling Rental Equipment
 Other: _____

State Samples Collected In: NY NJ PA NC
Special Processing: USACE Navy
Special Disposal: Lab Special
Reportable to PADEP? Yes
PWSID # _____
EDDS: Format Type: EquiS and .csv





34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS**
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: **3039864** 2 of 2
ALS Quote #:

Client Name: AECOM Address: 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876 Contact: Ravi Damara & Holly Brown Phone#: 301-674-3199 Project Name#: LMC MRC June SWS / 9584DACM Bill To: Ravi Damara		Container Type: CG AG 40mL 1L Preservative: HCI		Receipt Information (completed by Receiving Lab) Cooler Temp: Therm ID: No. of Coolers: Y N Initial							
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.		ANALYSES/METHOD REQUESTED									
Date Required: Approved? Email? <input checked="" type="checkbox"/> Y ravi.damara@aecom.com Fax? <input type="checkbox"/> Y No.		Enter Number of Containers Per Sample or Field Results Below.									
Sample Description/Location (as it will appear on the lab report)		* G or C		Matrix							
MRC-SW17A-061219	6/12/2019	1500	G	SW	2	2	VOCs (8260C)	1,4-Dioxane (8270D SIM)	Field Blank		
FB-061319	6/13/2019	1400	G	SW	2						
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
			G	SW							
Project Comments: Please also email data to holly.brown@aecom.com and naoum.lavantzis@aecom.com		LOGGED BY (signature):		REVIEWED BY (signature):		ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment <input type="checkbox"/> Other:					
Relinquished By / Company Name 1 <i>[Signature]</i> / AEAFCO 3 <i>[Signature]</i> 5 COMMON COURIER / ALS COURIER		Date 6/12/19 6/13		Time 1532 1413		Received By / Company Name COMMON COURIER / ALS COURIER COMMON COURIER / ALS COURIER		Date 6/12/19 6-14-19 825		Time 1453 825	
Special Processing <input checked="" type="checkbox"/> Standard <input type="checkbox"/> CLP-like <input type="checkbox"/> USACE		Deliverables <input type="checkbox"/> USACE		Reportable to PADEP? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Sample Disposal Lab <input checked="" type="checkbox"/> Special <input type="checkbox"/>		State Samples Collected In NY <input type="checkbox"/> NJ <input type="checkbox"/> PA <input type="checkbox"/> NC <input type="checkbox"/>		PWSID # EDDS: Format Type- EQuIS and .csv	





301 Fulling Mill Road
Middletown, PA 17057

P: (717) 944-5541

F: (717) 944-1430

Condition of Sample Receipt Form

Client: AECOM Work Order #: 3039804 Initials: NB Date: 6-14-19

- | | | | |
|--|------|-----|----|
| 1. Were airbills / tracking numbers present and recorded?..... | NONE | YES | NO |
| Tracking number: _____ | | | |
| 2. Are Custody Seals on shipping containers intact?..... | NONE | YES | NO |
| 3. Are Custody Seals on sample containers intact?..... | NONE | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | YES | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | YES | NO |
| 5a. Does the COC contain sample locations?..... | | YES | NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | YES | NO |
| 5c. Does the COC contain sample collector's name?..... | | YES | NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | YES | NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | YES | NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | YES | NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | | YES | NO |
| 6. Are all aqueous samples requiring preservation preserved correctly? | N/A | YES | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | YES | NO |
| 8. Are all samples within holding times for the requested analyses?..... | | YES | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | YES | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | N/A | YES | NO |
| 11. Were the samples received on ice?..... | | YES | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | YES | NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... | | YES | NO |
| 13a. Are the samples required for SDWA compliance reporting?..... | N/A | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | N/A | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | N/A | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | N/A | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | N/A | YES | NO |

Cooler #: _____

Temperature (°C): 2 _____

Thermometer ID: 401 _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

non DW