**Lockheed Martin**
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**6801 Rockledge Drive**
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**Bethesda, MD 20817**
**Telephone (301) 548-2223**

March 10, 2023

**VIA EMAIL AND PRIVATE CARRIER**

Anuradha Mohanty
Land and Materials Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite: 625
Baltimore, Maryland 21230

Subject: Transmittal of Change Pages for 2022 Annual Surface Water Sampling Report
Martin State Airport, 701 Wilson Point Road
Middle River, Maryland

Dear Ms. Mohanty,

For your information, please find enclosed an electronic copy of the above report. This prepared report presents sampling results for surface water samples collected in Frog Mortar Creek adjacent to the Dump Road Area at Martin State Airport in Middle River, Maryland.

The pages below have been revised and incorporated into the 2022 Annual Surface Water Sampling Report for Frog Mortar Creek.

- Table 3-1 – The table title has been changed to indicate samples were collected for all sampling rounds in 2022, and not just in September 2022.
- The change above necessitated a change in the table's title in the Table of Contents, that change has been made in the attached copy of the report.

If you have any questions or require any additional information please contact me by phone at 301-964-2482, or via e-mail at anthony.c.apanavage@lmco.com.

Sincerely,

Anthony Apanavage
Project Lead
Environmental Remediation Principal
Lockheed Martin Corporation

cc: (via email without enclosure)
Brian Dietz, MDE
Christine Kline, Lockheed Martin
Mary Morningstar, Lockheed
Michael Martin, Tetra Tech
Peter Shilland, CDM Smith

cc: (via mail with CD enclosure)
Pete Lekas, EA Environmental

cc: (via shipping courier; with enclosures)
Mark Williams, MAA
Al Pollard, Martin State Airport

cc: (via Box)
Remediation Records, Lockheed Martin

**Lockheed Martin Corporation**
**6801 Rockledge Drive MP: CCT-246**
**Bethesda, MD 20817**
**Telephone 301-548-2209**

January 30, 2023

**VIA EMAIL AND PRIVATE CARRIER**

Anuradha Mohanty
Land and Materials Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite: 625
Baltimore, Maryland 21230

Subject: Transmittal of the 2022 Annual Surface Water Sampling Report
Martin State Airport, 701 Wilson Point Road
Middle River, Maryland

Dear Ms. Mohanty,

For your review, please find enclosed two hard copies of the above-referenced document. This prepared s report describes the methods and results of four surface water sampling rounds conducted in 2022 at Frog Mortar Creek adjacent to the Dump Road Area Martin State Airport at Martin State Airport in Middle River, Maryland.

If possible, we respectfully request to receive MDE's document review comments by March 13, 2023.

If you have any questions or require any additional information please contact me by phone at 301-964-2482, or via e-mail at anthony.c.apanavage@lmco.com.

Sincerely,

Anthony Apanavage
Project Lead
Environmental Remediation Principal Lockheed Martin Corporation

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Brian Dietz, MDE
Christine Kline, Lockheed Martin
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Remediation Records Coordinator, Lockheed Martin

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Pete Lekas, EA Environmental

cc: (via shipping courier; with enclosures)
Mark Williams, MAA
Harold Fowler, Martin State Airport

# 2022 ANNUAL SURFACE WATER SAMPLING REPORT FOR FROG MORTAR CREEK MARTIN STATE AIRPORT 701 WILSON POINT ROAD MIDDLE RIVER, MARYLAND

Prepared for:
Lockheed Martin Corporation

Prepared by:
Tetra Tech, Inc.

March 2023

Approved by:
Lockheed Martin, Inc.

Revision: Change Pages

Michael Martin, P.G.
Regional Manager

Josh Mullis
Project Geologist

# TABLE OF CONTENTS

# TABLE OF CONTENTS (CONTINUED)

## LIST OF FIGURES



## LIST OF TABLES



## APPENDICES

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AWQC | ambient water quality criteria |
| BLM | biotic ligand model |
| BTAG | Biological Technical Advisory Group |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act (also known as the Superfund statute) |
| *cis*-1,2-DCE | *cis*-1,2-dichloroethene |
| cVOC | chlorinated volatile organic compound |
| DOC | dissolved organic carbon |
| DRA | Dump Road Area |
| EL | Edwards Lane |
| g/day | grams(s) per day |
| GIS | geographic information system |
| GSP | Greater Strawberry Point |
| IDW | investigation-derived waste |
| *J* | estimated concentration |
| Lockheed Martin | Lockheed Martin Corporation |
| MAA | Maryland Aviation Administration |
| MDANG | Maryland Air National Guard |
| MDE | Maryland Department of the Environment |
| MHHW | mean-high high-water |
| MLLW | mean-low low-water |
| MIP | membrane-interface probe |
| MRC | Middle River Complex |
| MSA | Martin State Airport |
| msl | mean sea level |

| | |
|---|---|
| µg/L | microgram(s) per liter |
| NAVD 1988 | North American Vertical Datum of 1988 |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System |
| NRWQC | national recommended water quality criteria |
| PA | preliminary assessment |
| PAHs | polycyclic aromatic hydrocarbons |
| PCB | polychlorinated biphenyl |
| PDF | portable document format |
| PFM | passive flux-meter |
| PHA | Petroleum Hydrocarbon Area |
| PPE | personal protective equipment |
| pVOC | petroleum volatile organic compound |
| QA | quality assurance |
| QC | quality control |
| RCRA | Resource Conservation and Recovery Act |
| RI | remedial investigation |
| SP | Strawberry Point |
| SVOC | semivolatile organic compound |
| SW | surface water |
| TB | trip blank |
| TCE | trichloroethene |
| TIC | tentatively identified compound |
| Tetra Tech | Tetra Tech, Inc. |
| TT East | Taxiway Tango Area East |
| TT North | Taxiway Tango Area North |
| *U* | not detected |
| UJ | analyte not detected; reported detection limit is approximate |

| | |
|---|---|
| UR | analyte not detected; result is unusable, as certain criteria were not met |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geological Survey |
| VC | vinyl chloride |
| VOC | volatile organic compound |

# SECTION 1
# INTRODUCTION

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech, Inc., (Tetra Tech) has prepared this report describing the methods and results of four surface water sampling rounds conducted in 2022 at Frog Mortar Creek adjacent to the Dump Road Area (DRA) of Martin State Airport (MSA) in Middle River, Maryland (see Figure 1-1). This work was completed between March and September 2022, in accordance with the *2022 Frog Mortar Creek Surface Water Sampling Work Plan* (Tetra Tech, 2022b), and sought to provide:

- additional data for surface water quality to determine the concentrations and spatial distributions of volatile organic compounds (VOCs) and other chemicals of potential concern in Frog Mortar Creek that might originate from a plume of volatile organic compounds in groundwater at the Dump Road Area of Martin State Airport
- data for numerical modeling to evaluate the interaction between shallow groundwater and Frog Mortar Creek
- information that can be used to assess human health risks for recreational users of Frog Mortar Creek and ecological risks to aquatic and benthic (i.e., sediment dwelling) organisms
- data for evaluating the effectiveness of the groundwater treatment system that began operating in December 2017

This report is organized as follows:

Section 2—Site Background and Previous Investigations: Briefly describes the site and previous Frog Mortar Creek investigations.

Section 3—Monitoring Approach and Methodology: Presents the technical approach and field methodology used for surface water sampling.

Section 4—Results: Presents the investigation results.

Section 5—Summary: Summarizes the investigation approach and results.

Section 6—References: Cites references used to compile this report.

Tables and figures are at the end of the report body following Section 6.

# SECTION 2
# SITE BACKGROUND AND PREVIOUS INVESTIGATIONS

## 2.1 SITE BACKGROUND

Martin State Airport (MSA) is at 701 Wilson Point Road in Middle River, Maryland. The eastern and western boundaries of the airport are (respectively) Frog Mortar Creek and Stansbury Creek (Figure 2-1); both are tidal tributaries of the Chesapeake Bay. The area under investigation is the portion of Frog Mortar Creek east of and adjacent to the Dump Road Area (DRA) site at MSA (Figure 2-1).

Detailed environmental studies have been conducted at the DRA since the early 1990s, when the Maryland Aviation Administration (MAA) removed drums discovered near Taxiway Tango in 1991. The DRA had consisted mostly of open meadows, mowed grass, and heavily wooded areas (Figure 2-2); however, a groundwater treatment plant and paved access road were recently constructed at the site. The DRA also includes an area adjoining Taxiway Tango, which is a concrete and asphalt taxiway; this taxiway is currently used by the Maryland Air National Guard (MDANG) for military aircraft operations.

Previous studies have demonstrated that soil, pond sediment, and groundwater at the DRA have been impacted by volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals because of prior dumping and backfilling. Polychlorinated biphenyls (PCBs) have also been detected in soil and pond sediment at the DRA. Prior to the operation of the groundwater extraction and treatment system, Frog Mortar Creek was hydraulically downgradient of the DRA, and directly received groundwater discharging from the DRA. Therefore, chemical constituents dissolved in groundwater at the DRA would have been discharged into the creek.

### 2.1.1 History

The current MSA property (approximately 775 acres) was originally part of the Glenn L. Martin Company's approximately 1,260-acre property, including surrounding areas containing manufacturing facilities. The Glenn L. Martin Company purchased six parcels of undeveloped land from private landowners during the spring and summer of 1929. During the 1940s and 1950s, nine additional parcels were acquired from private landowners. Three runways, Hangars 1, 2, and 3, and the airport administration building were built in 1939–1940. Hangars 4, 5, and 6, and the Strawberry Point hangar to the south, were completed in 1940–1941. Various aircraft were maintained in these facilities. After World War II, commercial transport and jet aircraft were maintained at MSA.

In July 1955, the MDANG 104th Tactical Fighter Group began leasing property in the northwestern portion of MSA. On April 1, 1960, the 135th Tactical Airlift, previously based in Baltimore, transferred to MSA, and by October 1962 the 104th Tactical Fighter Group had been reorganized and designated the 175th Tactical Fighter Group. On September 20, 1975, the State of Maryland, through the Department of Transportation, purchased 747 acres that now constitute MSA, of which 175 acres in the northeastern portion are leased to MDANG.

The Glenn L. Martin Company consolidated with American Marietta Corporation in September 1961 to form Martin Marietta Corporation. Lockheed Corporation and Martin Marietta merged in 1996 to form Lockheed Martin Corporation (Lockheed Martin). Lockheed Martin and/or its subsidiaries currently own the Middle River Complex (MRC), a property of 160 acres west of the airport.

### 2.1.2 Current Conditions

The MAA operates MSA on behalf of the Maryland Department of Transportation. MSA includes the administration building (the Main Terminal building), aircraft hangars, a 7,000-foot-long runway, several taxiways, and the Strawberry Point Maryland State Police Hangars (see Figure 2-1). MAA manages more than 130,000 square feet of heated hangar space and 190 smaller aircraft hangars. The southwestern portion of MSA contains numerous aboveground fuel storage tanks for Jet A and Avgas 100LL fuels. MSA is also home to more than 20 commercial tenants that provide fuels and lubricants, helicopter avionics repair, and flight instruction. The site also

hosts Baltimore County Police aviation and marine units and the Glenn L. Martin Museum (MAA, 2013).

A groundwater extraction and treatment system was constructed in 2017 and is currently operating at the DRA. Continuous (24 hour-per-day) operation of the system began on November 23, 2017; the system shuts down periodically for maintenance and other activities to maintain proper operation of the plant. The system consists of 16 groundwater extraction wells, underground piping, and a building that houses components to treat groundwater containing VOCs, SVOCs, and metals at concentrations above Maryland Department of the Environment (MDE) groundwater standards. The wells and underground piping pump groundwater from the surficial aquifer to the treatment building and create a "hydraulic barrier" that captures groundwater and prevents its contaminants from migrating off-site. The treatment building is 60 feet wide and 170 feet long (10,200 square feet) and is adjacent to Frog Mortar Creek in the east-central portion of the DRA (Figure 2-2). Treated groundwater is tested routinely and is discharged to Frog Mortar Creek via a National Pollutant Discharge Elimination System (NPDES)-permitted outfall.

### 2.1.3 Land Use

MSA is generally characterized as a moderately developed tract in a largely suburbanized, moderate-density, populated setting. Land use surrounding MSA is a combination of mixed suburban, industrial, and lightly to moderately developed commercial and woodland tracts. MSA is bordered on the north by Eastern Boulevard (Maryland Route 150) and Amtrak railroad lines. Undeveloped woodland tracts and low-density residential properties are north of Eastern Boulevard and the Amtrak line. MSA's eastern, southern, and western boundaries are bordered by Frog Mortar Creek and Stansbury Creek. Lockheed Martin's MRC lies along MSA's northwestern boundary.

Low- to medium-density residential and light commercial land uses (e.g., shopping centers, convenience stores, restaurants, etc.) characterize properties beyond the creeks east, south, and west of MSA. Low- to medium-density residential communities near MSA include Wilson Point to the southwest, Stevens Point to the northeast, and Bowleys Quarters to the east and southeast. The high-density residential communities of Bengies Corner and Hawthorne Park lie farther east

and west of MSA, respectively. The main commercial district for Middle River is approximately one mile northwest of MSA.

### 2.1.4 Climate

The climate at MSA is characterized as humid temperate, with hot, humid summers and relatively mild winters. The Baltimore, Maryland area received approximately 41 inches of precipitation in 2021, and has received over 42 inches of precipitation in 2022, as of November 30, according to the National Oceanic and Atmospheric Administration website (NOAA, 2022); precipitation is generally distributed evenly throughout the year. Rainfall in the summer normally occurs as showers and thunderstorms. Winter precipitation is typically light to heavy rainfall or snow. Tropical storms in late summer and fall, and occluded, meso-scale frontal systems (i.e., coastal low-pressure systems) in winter and spring, occasionally provide short-term, above-average precipitation.

### 2.1.5 Physiography

MSA is in the western shore of the Coastal Plain physiographic province. The Coastal Plain consists of sediment composed of alluvium from the Pleistocene Epoch and the Potomac Group from the Cretaceous Period. Coastal Plain sediment begins at the fall line and follows a regional dip to the southeast at approximately 110 feet per mile (Hansen and Edwards, 1986). The fall line is the division between the Piedmont and Atlantic Coastal physiographic provinces; it refers to an imaginary line connecting waterfalls or changes in stream flow between the hard-rock upland areas of the Piedmont and the unconsolidated-sediment lowland areas of the Coastal Plain. The Coastal Plain is generally characterized by low topographic relief. However, steep embankments and hills are found along stream channels, rivers, and the Chesapeake Bay.

### 2.1.6 Topography

Most of MSA's land surface is generally flat to gently sloping in the areas of the runway, taxiways, and in areas containing surrounding support operations. The MSA runway forms a trending topographic ridge, or drainage divide, that slopes gently from its northwestern to southeastern end. Runway elevations range from slightly more than 20 feet above the North American Vertical Datum of 1988 (NAVD 1988) at the northern end to slightly more than 10 feet above NAVD 1988

at the southern end. The land slopes away from the runway toward Frog Mortar Creek to the northeast and Stansbury Creek to the southwest. Site topography in the western portion of MSA ranges from flat to gently sloping north, east, and south of Hangars 1–6, and steeply sloping alongside the administration building and hangars.

DRA topography ranges from flat to gently sloping to the northeast toward Frog Mortar Creek. In the northern portion of the DRA, land elevations range from approximately 11 feet above NAVD 1988 near the runway to approximately seven feet above NAVD 1988 at Pond 2. In the southeastern portion of the DRA near Frog Mortar Creek, land elevations are approximately 20 feet above NAVD 1988 at a mounded area near the creek embankment. The elevation at the top of the creek embankment ranges from approximately 10 feet above NAVD 1988 at the northern portion of the DRA to approximately 20 feet above NAVD 1988 in the southern portion. Land surface elevation at the Frog Mortar Creek shoreline is near zero feet, relative to NAVD 1988.

### 2.1.7 Surface Water Hydrology

The eastern, southern, and western boundaries of MSA are bordered by Frog Mortar Creek and Stansbury Creek, which are wide, brackish, tidal tributaries of the Chesapeake Bay. Surface water runoff from MSA enters these creeks via localized gullies in the eastern and western undeveloped portions of the site, or via storm sewers that drain the airport runway, taxiways, and developed portions of MSA. MSA encompasses 47 drainage areas in three watersheds, forming a total drainage area of 700 acres (MAA, 2008). The airport drainage areas range in size from seven acres to more than 170 acres.

Surface drainage in the western area of MSA is discharged via multiple outfalls into Dark Head Cove. Outfall 007 has a drainage area of 30 acres, and drains runway access, parking, commercial tenant buildings, private tenant hangars, and a wetland mitigation site. This 30-acre drainage area also includes grassy surfaces along Wilson Point Road and Strawberry Point Road, the impervious areas of Taxi-Lane B and aircraft and vehicle parking areas, and the airport's wetland mitigation site and its bordering vegetated areas. Outfall 007 is at the exit of an existing 24-inch storm-drain system.

These MSA outfalls are monitored monthly by MAA to ensure that no oil discharges to surface water. Secondary containment drains are also routinely inspected and emptied of stormwater. All stormwater runoff originating from MSA discharges to outfalls, as specified in the MAA National Pollutant Discharge Elimination System permit (No. MDR 05501, "General Discharge" permit No. 05-SF-5501).

Monitoring requirements are not stipulated by the MSA general industrial permit. However, limited monitoring is performed during annual inspections of monitored outfalls as part of the "Municipal Separate Storm-Sewer System" permit held by MAA for the MDE Illicit Discharge Detection and Elimination program, which includes laboratory analyses for ammonia, dissolved oxygen, surfactants, fecal coliform, potassium, water temperature, conductivity, pH, and fluoride concentrations. Visual inspections are routinely performed, and annual reports are submitted to MDE.

### 2.1.8 Geology and Hydrogeology

MSA is in the western shore of the Coastal Plain physiographic province. Regional and local studies (Vroblesky and Fleck, 1991; Chapelle, 1985) indicate that the MSA lies on the Patapsco Formation, which consists of complex and interbedded mixtures of gray, brown, and red sands, silts, and clays originating from sediment deposition in a low coastal-plain traversed by low-gradient meandering streams. Below the Patapsco Formation lies a regionally extensive, thick, clay confining-unit known as the Arundel Formation. This massive and probably impermeable unit underlies the site and surrounding area; it outcrops northwest of the site and dips and thickens to the southeast. The Arundel Formation extends as far east as Cambridge, Maryland, where it is more than 600 feet thick.

Regional lithologic information suggests that the Arundel Formation might be 150 feet thick at MSA (Vroblesky and Fleck, 1991; Chapelle, 1985). The formation probably acts as an impermeable barrier to the downward movement of any constituents found in the surficial aquifer. The base of the Arundel Formation (i.e., the top surface of the deeper Patuxent Formation) is approximately 225 feet below mean sea level (msl) near MSA (Vroblesky and Fleck, 1991; Chapelle, 1985). Consequently, the depth to the base of the Arundel Formation might range from 235–255 feet below grade at MSA.

Below the Arundel Formation is the Patuxent Formation. The multi-aquifer Patuxent Formation consists of various interbedded sand and silt/clay layers, with abrupt changes of deposited material types over short distances. Permeable, sand-rich units range from bounded sand sheets to isolated sand bodies (Glaser, 1969). In the MSA area, potentiometric maps of the formation indicate that groundwater flows to the south and southwest, in response to industrial wells withdrawing water southwest and west of the site (Chapelle, 1985 and Curtin, 2006).

### 2.1.9 Vicinity Subsurface Conditions

An extensive subsurface investigation has been undertaken at the DRA. Less extensive environmental investigations have been conducted at Strawberry Point (SP) and Greater Strawberry Point (GSP), which are south and southwest of the DRA, respectively (see Figure 2-1). As part of the DRA investigation, numerous shallow and deep soil borings have been advanced to collect soil samples for subsurface lithologic information. Synoptic water-level measurements, single-well permeability tests, and pumping tests have been conducted to characterize subsurface hydraulic conditions at the DRA.

Studies at the DRA have indicated that the subsurface hydrogeology is composed of a surficial aquifer (i.e., the Patapsco Formation) containing highly heterogeneous mixtures of unconsolidated sand, silt, gravel/sand mixtures, and clay. A layer of fill, consisting of heterogeneous sand, silt, and clay overlies this native sediment. For data evaluation and correlation, the surficial aquifer is divided into upper, intermediate, and lower surficial-aquifer zones. The lower surficial-aquifer zone is encountered up to approximately 45–73 feet below ground and overlies at least several feet of stiff, dense clay.

A deep-groundwater study investigated the lithology beneath the lower surficial-aquifer (Tetra Tech, Inc. [Tetra Tech], 2009a). Lithologic data from four deep DRA wells indicate six to 40 feet of clay beneath the lower surficial aquifer. Deep-well logs also indicate alternating sand and silt aquifers and clay aquitards beneath the lower surficial-aquifer. These sandy units are referred to as the deep confined-aquifer zones.

## 2.2 PREVIOUS INVESTIGATIONS

The following sections summarize environmental investigations of Frog Mortar Creek, some of which were conducted during DRA studies.

### 2.2.1 Preliminary Assessment and Remedial Investigation

In 1985, MDE inspected MSA and found approximately 200 55-gallon drums containing acetone, creosote, and chrome paint in the storage yard behind the maintenance building (MDE, 1989). MDE also investigated MSA in 1988, in response to an anonymous telephone call claiming that a large chemical dump had been in operation at SP during World War II, and that a large number of drums containing zinc cyanide were buried there (MDE, 1989). However, MDE was unable to confirm these claims during site visits and interviews with past and current facility workers.

MSA environmental issues were further studied in 1989 as part of a federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) preliminary assessment (PA) conducted by MDE under contract to the United States Environmental Protection Agency (USEPA). The PA identified areas of former acid-disposal pits at MSA as major areas of concern. The PA identified two other environmental issues at MSA: (1) the maintenance building yard drum-storage area, and (2) three buildings previously used for a nuclear generator. The PA also addressed the 1988 anonymous telephone call and associated claims regarding the alleged chemical dump and buried drums at SP.

One of the reported disposal pits included a sand pit under the current Taxiway Tango. This area had reportedly been used by the Glenn L. Martin Aircraft Company from the 1930s through the 1950s to dump spent battery acid, acid-type strippers, and other acidic solutions, along with dredge spoils and construction debris (MDE, 1989). In 1956, a second pit was constructed closer to Frog Mortar Creek, and the first pit was filled during construction of Taxiway Tango. These areas eventually became subject to the federal Resource Conservation and Recovery Act (RCRA) and its regulations, most of which were in effect at the time of the preliminary assessment. At that time, USEPA found no signs of waste disposal and classified the site as “No Further Remedial Action Planned.”

In July 1991, four drums containing dried zinc-chromate paint were uncovered adjacent to Taxiway Tango during installation of underground electric cables, prompting MDE to order additional studies (see Figure 2-2). The MAA (the airport operator when the drums were discovered) removed the drums and conducted additional studies from 1991–1998, including geophysical surveys to locate and identify buried materials and sampling and chemical analyses of soil, groundwater, surface water, and sediment. These initial investigations identified four areas of concern at MSA (Figure 2-2):

- Taxiway Tango Median Anomaly Area—In 1991, four buried drums containing dried zinc-chromate paint were unearthed and removed from the area between Taxiway Tango and the airport runway and northwest of Taxiway D. A construction drawing indicated fill and trash, and an initial geophysical survey indicated several electromagnetic anomalies, suggesting buried metal.

- Drum Area—In the forested area near wells MW-2 and MW-5, northeast of Taxiway Tango, several drums were uncovered when surface vegetation was cleared during a 1996 site investigation.

- Two ponds—Historical records indicate that acids may have been discharged at the present location of these ponds (approximately 450 feet and 600 feet northeast of Taxiway Tango) sometime during the 1930s through the 1960s. A third pond is shown on a United States Geological Survey (USGS) topographic map (photo-revised in 1985) found during the PA, but MDE could not locate this pond during the 1989 site visits.

- Petroleum Hydrocarbon Area (PHA)—The PHA is approximately 200 feet west of the ponds. Petroleum hydrocarbons were encountered while drilling a soil boring in this area during the 1996 site investigation.

These four areas became the focus of subsequent studies when chemical-constituent impacts to soil, pond sediment, and groundwater became apparent. MAA first investigated Frog Mortar Creek in 1998.

From 1999–2010, Lockheed Martin conducted a remedial investigation (RI) (Tetra Tech, 2012c) and a supplemental RI (Tetra Tech, 2013e) to further delineate the extent of chemical contamination indicated in earlier MSA studies. The RI identified large areas of buried fill and debris, surface- and subsurface-soil contamination in and around the buried fill material, and contamination in pond sediment via geophysical surveys, membrane-interface probe (MIP) sampling, test pits, soil borings, and chemical analyses of soil and pond-sediment samples. The

extent of buried fill and debris was estimated to be present over approximately 25 acres (see area with tan shading on Figure 2-2).

The fill material consists of soil, stained soil, and debris, the latter of which is comprised of concrete rubble and disposed industrial items (e.g., batteries, deteriorated drums, tires, paint cans, burned items, sludge, buckets, glass, and wood). VOCs, SVOCs, PCBs, and several metals were detected in soil at concentrations exceeding human health risk screening levels. Chlorinated VOCs (cVOCs) (trichloroethene [TCE] and its degradation products), petroleum VOCs (pVOCs) (e.g., benzene, toluene, ethylbenzene, xylenes [BTEX], etc.), and metals were also detected in surficial-aquifer groundwater at concentrations exceeding Maryland groundwater and drinking water standards.

### 2.2.2 Dump Road Source-Areas Investigation

The four possible source areas listed in Section 2.2.1 were the focus of the initial investigations in the 1990s and have been investigated during follow-on work to date. In addition, the *Dump Road Source-Area-Investigations Work Plan* (Tetra Tech, 2012b) and the technical memorandum for the Dump Road Area source-delineation study (Tetra Tech, 2012d) identified three additional areas (Figure 2-2) of elevated VOCs in soil and groundwater that required further investigation. These areas are identified as:

- Taxiway Tango Area East (TT East)
- Taxiway Tango Area North (TT North)
- area east of Pond 1

The 2012 source-area investigation was designed to gather additional environmental data at all seven identified areas.

The 2012 historical aerial photograph and document review (Tetra Tech, 2013d) confirmed the location and use of Pond 1 as an acid and oil pit, and identified several other operational features, such as debris piles at the Drum Area and an open burning area and open pit at TT East. That study also identified other features as possible chemical source areas; these former features/possible

source areas, discussed in further detail in Section 6 of the *Dump Road Area Characterization of Possible Source-Areas Report* (Tetra Tech, 2013c), are:

- former Pond 3 (south of Pond 1)
- former Ponds 5 and 6
- DMW-4 former debris pile area
- Taxiway Tango area south (former disturbed area)
- former Pond 7 (currently a wetland)
- former ammunition or fuel bunkers

### 2.2.3 1997 Frog Mortar Creek Investigation

In late 1997, MAA investigated possible surface water and sediment contamination in Frog Mortar Creek east and hydraulically downgradient of the DRA (Apex Environmental, 1998). Six sediment and nine surface water samples were collected along three transects in Frog Mortar Creek (see Figure 2-3), and were analyzed for VOCs, SVOCs, metals, cyanide, and pH (a measure of the acidity or alkalinity of a substance).

SVOCs and cyanide were not detected in surface water samples at concentrations above laboratory method-detection limits. The sole VOC (methylene chloride) detected is considered a common laboratory contaminant. Several SVOCs (primarily polycyclic aromatic hydrocarbons [PAHs]) and metals were detected above laboratory-method detection limits in sediment samples. High concentrations of copper were detected in sediment, and several metals exceeded comparison criteria in surface water samples.

MDE reviewed the surface water and sediment data collected during this investigation and concluded (in a memorandum issued on August 20, 1998 [MDE, 1998]) that these exposure concentrations were within USEPA-acceptable levels of risk. Additionally, the Maryland Environmental Service (MAA's consultant at the time of the investigation) determined that SVOC concentrations in sediment were comparable to background levels found in other sediment samples collected in the Chesapeake Bay, and that they posed no public health or environmental concerns with respect to surface water or bottom-sediment quality.

### 2.2.4 2004 Frog Mortar Creek Investigation

In July 2004, Tetra Tech collected sediment and surface water samples from Frog Mortar Creek to provide data for risk assessment (Tetra Tech, 2006). Two sediment samples and two surface water samples were collected within 50 feet of the DRA shoreline. These locations were selected based on extensive groundwater sampling and modeling, which indicated that the direction of the on-site VOC plume was toward Frog Mortar Creek. Sampling locations are shown on Figure 2-4.

Sediment and surface water samples were analyzed for VOCs, SVOCs, PCBs, metals, and pesticides. Trace VOC concentrations and reportable concentrations of various metals were detected in surface water and sediment samples. These data were used to assess risk to recreational users of Frog Mortar Creek. The results of the 2006 human health risk assessment indicated that contact with sediment and surface water in Frog Mortar Creek during recreational uses of the creek did not pose a significant cancer risk or health hazard to adult, youth, and child recreational users (Tetra Tech, 2006).

### 2.2.5 2007–2008 Frog Mortar Creek Investigation

In 2007–2008, Tetra Tech completed a three-phase investigation of surface water and sediment in Frog Mortar Creek (Tetra Tech, 2009b) to identify and sample areas of groundwater discharge into Frog Mortar Creek, to assess possible impacts to creek sediment and surface water, and to determine whether contaminants might have historically migrated from the site into Frog Mortar Creek via surface erosion. The three-phase investigation entailed the following tasks:

- Phase I used a Trident™ probe to identify locations where groundwater discharges to surface water.
- Phase II sampled surface water and shallow sediment at the locations identified as possible groundwater discharge points in Phase I.
- Phase III sampled deeper sediment at locations identified in Phase II as possibly affected.

Sampling locations for the three phases of this investigation are shown in Figures 2-5 through 2-7, respectively. The results of the Phase I Trident™ study identified the likely presence of groundwater discharge at the southern end of the DRA groundwater plume (Figure 2-5). The

Phase II investigation indicated that groundwater discharge appeared to be affecting surface water and sediment in Frog Mortar Creek east of the DRA (Figure 2-6). The Phase III investigation confirmed the Phase II results, but also indicated that metals and PAHs were in other areas of the Frog Mortar Creek system, including the marina and other developed locations north of the DRA; however, these latter areas were not suspected to be affected by groundwater discharge from the DRA (Figure 2-7).

The 2007–2008 investigation concluded that cVOC groundwater contamination was affecting surface water and sediment upon discharge at locations adjacent to and east of the DRA. These locations are within the lateral boundaries of the groundwater plume and known fill area at the DRA. Sediment sampling and analyses indicated that the highest concentrations of cVOCs known to be associated with DRA groundwater were in sediment adjacent to the site. The highest concentrations of metals were typically found at areas away from the DRA, and the highest concentrations of PAHs were found in Frog Mortar Creek north of the site. PCB levels at DRA were consistent with regional background concentrations; the maximum PCB concentrations detected in Frog Mortar Creek were found north of the site.

Several metals concentrations in surface water exceeded USEPA national recommended water quality criteria (NRWQC). However, these metals concentrations were consistent in Frog Mortar Creek, and did not appear associated with known MSA contaminant sources. The 2007–2008 study concluded that surface water concentrations of PAHs and metals appear associated with typical sources within active recreational water bodies like Frog Mortar Creek, such as metals from marine paint, PAHs from boat exhaust and oil discharge, and runoff from adjacent land sources.

Gar Gut, an embayment of Frog Mortar Creek north of the DRA, had localized elevated concentrations of VOCs, PAHs, and metals in surface water, and elevated concentrations of PAHs and PCBs in sediment. However, the types and concentrations of contaminants at this location were not considered related to the DRA and did not include contaminants typically detected in Frog Mortar Creek.

### 2.2.6 2010 Frog Mortar Creek Investigation

As part of the July 2010 groundwater and surface-water sampling program, three surface water samples were collected along the western shoreline of Frog Mortar Creek near the DRA (Tetra Tech, 2010). Sampling locations are shown on Figure 2-8. Sample MSA-SW38 was collected from a location hydraulically downgradient of the DRA VOC groundwater plume and northeast of wells DMW-2A/B, which are near the center of the DRA groundwater VOC plumes. Samples MSA-SW37 and MSA-SW39 were collected north and south of the DRA, respectively. The primary site groundwater contaminants TCE, *cis*-1,2-dichloroethene (*cis*-1,2-DCE), vinyl chloride (VC), and 1,4-dioxane were detected in sample MSA-SW38, as well as low concentrations of three other DRA groundwater VOCs: 1,2,4-trichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene. These results indicated that VOC-impacted groundwater from the DRA discharges to Frog Mortar Creek.

The VC concentration of 32 micrograms per liter (µg/L) detected in MSA-SW38 exceeded the surface water criterion for human health based on consumption of organisms. Other site VOCs, such as BTEX, chlorobenzene, and other chlorobenzene isomers, were not detected in the surface water samples collected from Frog Mortar Creek in 2010. Hexavalent chromium was detected in three surface water samples at concentrations below ecological screening levels.

Note that in the discussions that follow, the prefix of "MSA-," which is common to most surface water sampling locations in Frog Mortar Creek, is omitted to streamline the discussion (e.g., MSA-SW37 will be referred to as "SW37").

### 2.2.7 2011 Frog Mortar Creek Investigation

Four quarterly rounds of surface water samples were collected in March, June, September, and December of 2011. Five near-shoreline surface water samples were collected from Frog Mortar Creek in March (Figure 2-9) from locations SW37A through SW41A. Starting in June 2011, the sampling area was expanded, and 27 surface water samples along nine transects were collected from Frog Mortar Creek during each subsequent quarterly sampling round in 2011.

These samples were chemically analyzed to assess surface water concentrations of chemical constituents previously detected in Frog Mortar Creek, and to assess impacts to creek

surface-water quality from the DRA groundwater plume. Sixty additional surface water samples were collected from Frog Mortar Creek in August 2011 (Figure 2-10) during two additional surface water sampling events. These samples were chemically analyzed to assess variations in surface water concentrations at different depths and at high and low tides (Tetra Tech, 2012a). The additional sampling round conducted during summer was used to assess human health exposure related to recreational use of Frog Mortar Creek.

The tidal phase relative to the time of collection appeared to have some influence on detected VOC concentrations, particularly in samples collected 50 feet from the shore. In general, VOC concentrations in "B-series" samples (collected 50 feet from the shore) were higher at low tide than at high tide, irrespective of sampling depth. However, at near-shore surface water sampling location SW38A-1-HT, VOC concentrations were higher at high tide. At that location, low tide VOC concentrations were also higher than high tide concentrations collected along the southernmost August transect (SW43). This effect is likely due to more complex mixing in the very shallow, near-shore environment in response to tidal changes.

Surface water samples collected in 2011 were analyzed for VOCs, 1,4-dioxane, perchlorate, filtered and unfiltered metals, and total hexavalent chromium. The March samples were also analyzed for PAHs, the June samples were analyzed for SVOCs, and August samples were analyzed for VOCs only. In general, VOCs and 1,4-dioxane concentrations in March and December samples were higher than concentrations detected in samples collected during the summer, and were highest at locations SW38A and SW41A, which are northeast and hydraulically downgradient of the DRA monitoring wells containing some of the highest concentrations of site-related constituents in groundwater (e.g., wells DMW-2S/A/B and DMW-5S). In the transects with higher VOC concentrations, COC concentrations decreased progressively in samples collected farther from the shoreline, and all COC concentrations generally decreased progressively north and south of transects SW38 and SW41.

1,4-Dioxane was predominantly detected near the shoreline, or in the "A" samples of transects SW38, SW40, and SW41, and perchlorate was only detected in the December samples. Both perchlorate and 1,4-dioxane were detected below their respective then-current screening levels. Concentrations of four dissolved metals (barium, manganese, arsenic, and cadmium) and three

total metals (iron, mercury, and selenium) exceeded their respective screening levels in one or more of 88 surface water samples collected. However, three of these metals—dissolved cadmium, total mercury, and total selenium—only exceeded a screening level in fewer than six percent (i.e., one to five samples of 88) of the samples collected. Dissolved barium was detected within a narrow concentration range, generally within 2-3 µg/L. Although dissolved barium concentration varied in magnitude over the sampling rounds, concentrations were spatially consistent within each round, suggesting that these concentrations might be natural levels for Frog Mortar Creek. Dissolved arsenic was detected at levels similar to the range of concentrations (2.2–3.9 µg/L) reported for reference samples (i.e., background locations) collected from Frog Mortar Creek in 2007-2008 (Tetra Tech, 2009b). Hexavalent chromium was not detected in the March or September samples, but was detected in all June and December samples; all detected concentrations were below the screening level.

All but six VOCs were detected at concentrations less than screening criteria in 2011. The six concentrations exceeding the criteria included two concentrations of TCE in March (shoreline samples SW38A and SW41A), one concentration of TCE in December (shoreline sample SW41A), one concentration of VC in March (shoreline sample SW38A), and one concentration each of total xylenes and *meta*- and *para*-xylenes in March (sample SW38A).

The VC detection (140 µg/L) in March at location SW38A led to the eventual development of site-specific, risk-based screening levels to protect people potentially exposed to TCE, *cis*-1,2-DCE, and VC while swimming. It also prompted the request by MDE for additional rounds of sampling in the summer months (beginning in August 2011) to characterize water quality during the recreational season.

### 2.2.8 2012–2018 Frog Mortar Creek Investigations

In April 2012, MDE issued a water contact advisory to inform the public of potential risks posed by the contaminants in Frog Mortar Creek, and recommended limiting swimming or wading exposures in the creek adjacent to MSA (MDE, 2012). The area of concern began at the beach adjacent to the southern end of the MDANG structures and continued in a southeasterly direction for approximately 2,000 feet. Signs were placed along the shoreline in the affected area to notify boaters and swimmers of the water contact advisory for this portion of the creek. Note, however,

that the Maryland Department of the Environment lifted the Frog Mortar Creek water contact advisory on December 12, 2022 (MDE, 2022), based on improvements in creek water quality resulting from the operation of the groundwater extraction and treatment system in the Dump Road Area of Martin State Airport. The advisory signs were removed from the creek on December 19, 2022.

Seven rounds of surface water samples were collected in 2012 from Frog Mortar Creek (in January, March, June, July, August, September, and December) to assess impacts to creek surface water quality from the DRA groundwater plume (Tetra Tech, 2013b). Three surface water samples were also collected from the eastern shoreline starting in January 2012, and 40 surface water samples were collected from the western and eastern shorelines in each of the subsequent six sampling rounds in 2012. Of those six, five rounds of 40 surface water samples were collected from Frog Mortar Creek in March, June, July, August, and September in 2013. The sixth surface-water sampling round scheduled for December 2013 was abandoned because the creek was frozen.

In 2014–2018, six rounds of surface water samples were collected from Frog Mortar Creek in March, June, July, August, September, and December. Beginning in July 2015, four additional near-shore samples were collected between transects SW42 and SW40 (SW46A), SW40 and SW38 (SW47A), SW38 and SW41 (SW48A), and SW41 and SW43 (SW49A). These four locations were sampled to assess constituent concentrations between transects exhibiting the highest VOC concentrations, and were included in the remaining August, September, and December 2015 sampling rounds, as well as in all six rounds in 2016, 2017, and 2018. Sampling locations are shown on Figure 2-11.

Samples from the western shoreline were analyzed for VOCs, filtered metals, and hexavalent chromium. Samples from the eastern shoreline were analyzed for VOCs only, except for the March sampling round, when samples from the eastern shoreline were also analyzed for metals, including hexavalent chromium. Samples collected from SW46A–SW49A were analyzed for volatile organic compounds only. Sampling results were screened against the USEPA Region 3 Biological Technical Advisory Group (BTAG) ecological screening-benchmarks for freshwater, the NRWQC, the Maryland ambient water quality criteria (AWQC) for acute and chronic

aquatic-organism exposures and human health criteria for aquatic-organism consumption, and site-specific levels developed to assess risk to swimmers.

Consistent with prior results, VOCs (primarily TCE, cis 1,2 DCE, and VC) and dissolved metals were detected in the surface water samples, with the highest concentrations at sampling transects (SW38, SW40, SW41, and SW43) northeast and hydraulically downgradient of the DRA monitoring wells containing some of the highest concentrations of site-related constituents in groundwater (e.g., wells MW-18I, DMW-2S/A/B, DMW-4, and DMW-5S). All VOC sampling results collected from the eastern shoreline transect were less than federal and state screening levels, as well as less than site-specific swimming screening levels.

Similar to previous sampling rounds, VOC concentrations generally decreased progressively north and south of respective transects SW40 and SW41, and the highest VOC concentrations within transects were generally near the shoreline and decreased progressively in samples collected farther from shore. VOC concentrations tended to be higher in cooler months (i.e., January, March, and December) as compared to concentrations detected during warmer months.

Most detected VOC concentrations were less than state and federal screening criteria, with a few VOCs infrequently detected above their respective criteria, generally in the samples collected nearer to shore. TCE exceeded its site-specific, risk-based screening level for swimming (10 µg/L) six times in 2012, once in 2013, 10 times in 2014, 15 times in 2015, twice in 2016, and twice in 2017, but did not exceed its swimming screening level in any round in 2018. Most TCE exceedances occurred in non-swimming months (i.e., March and December), except for the exceedances detected in 2016 and 2017, which were detected in August and September.

VC consistently exceeded its site-specific, risk-based screening level protective of swimmers (0.7 µg/L) at location SW38A during the warmer (spring/summer) months of 2012 through 2017. Other sampling locations had summer VC exceedances, but the frequency and location varied each year. Prior to 2016, VC concentrations were typically highest (and exceeded the swimming screening level more frequently) in the cooler months (i.e., March and December). However, VC consistently exceeded its swimming screening level in all sampling rounds collected in 2016 and 2017. VC exceedances in 2018 also occurred in in March (11 exceedances), July (two exceedances), September (two exceedances), and December (two exceedances). VOCs detected in 10% or more

of creek samples in 2018 included (in descending order) cis-1,2-DCE, VC, and TCE, whose maximum concentrations were approximately 4,655 times (cis 1,2 DCE), 17,600 times (TCE), and 867 times (VC) lower than the maximum concentrations detected in DRA groundwater samples.

Concentrations of several metals (arsenic, barium, beryllium, cadmium, copper, and thallium) exceeded at least one screening level in one or more surface water samples in 2012 through 2018. Dissolved barium and dissolved arsenic most frequently exceeded their screening levels. Barium appears ubiquitous in surface water at Frog Mortar Creek, and its detected concentrations were spatially consistent across each sampling round, suggesting that these concentrations may be natural levels in the creek. Arsenic concentrations remained similar to those reported for background locations collected during the 2007–2008 Frog Mortar Creek investigation (Tetra Tech, 2009b). Hexavalent chromium was detected in most samples in 2018 at concentrations well below its lowest screening criterion, but was not detected in 2018; when detected, no spatial trends for hexavalent chromium detections were apparent.

### 2.2.9 2014–2015 Groundwater Discharge Investigation

A 2014–2015 study characterized discharge of groundwater VOCs from the DRA to Frog Mortar Creek (Tetra Tech, 2015b). The study objective was to provide data to update and improve the DRA groundwater model, and to optimize pumping rates for wells near the shoreline of Frog Mortar Creek that would be used during the interim remedial action for groundwater. The study included the deployment, retrieval, and chemical analyses of passive flux-meters (PFMs) installed in Frog Mortar Creek sediment. The investigation was done in conjunction with the University of Florida.

The passive flux-meter, developed by Dr. Michael Annable of the University of Florida, was developed to measure contaminant flux in groundwater, and was modified to quantify water and contaminant exchange at the sediment and surface water interface in this study. Each PFM consisted of a flexible, water-permeable membrane capable of adsorbing/retaining VOCs via its internal sorbent medium (i.e., granular activated-carbon). The membrane was impregnated with five alcohol tracers that had different partitioning characteristics. PFMs were inserted into small, two-foot-long drive-point devices (i.e., mini-wells), constructed of a solid two-inch-diameter polyvinyl chloride casing with a slotted screen.

Six PFMs were initially deployed in May 2014 along a transect extending from the shoreline of the DRA toward the center of Frog Mortar Creek. This initial deployment was used to evaluate parameters needed to conduct a full-scale PFM study over a larger area of Frog Mortar Creek. The full-scale study in March 2015 deployed 48 PFMs.

PFMs were arranged in a grid along 11 transects two feet below the sediment in Frog Mortar Creek, at distances of 10, 60, 110, and 160 feet from the western shoreline. Four deeper PFMs (four feet deep) were also installed parallel to one transect (SW38) near the center of the DRA that historically had high concentrations of VOCs (i.e., TCE, *cis*-1,2-DCE, and VC). PFMs were left in place for approximately two weeks and were retrieved on April 7–8, 2015.

The recovered devices were analyzed for VOC compounds and for the alcohol tracers impregnated into the PFMs by the University of Florida. (Tracer loss is directly related to water flow velocity, and to the duration of the meter's deployment period.) Electronic water-level pressure-transducers/data-loggers were used to record water levels at two depths in the Frog Mortar Creek study area, and in three DRA groundwater-monitoring wells, to evaluate groundwater and surface water flow interaction, and to study contaminant flux from groundwater at the DRA to Frog Mortar Creek.

The results of the groundwater discharge study are shown on Figure 2-12. A contiguous area of relatively high upward groundwater flow was indicated in the southern portion of the DRA near PFM-31 (maximum upward flow location), with higher upward flow rates nearby at PFM-35 and PFM-32, and, to a lesser extent, at PFM-36, PFM-37, and PFM-39. Most of the estimated VOC mass discharged to the creek occurred at locations PFM-15, PFM-16, and PFM-31. Locations PFM-15 and PFM-16 were in the northern portion of the study area, northeast of wells MW-47S/I/D (with TCE concentrations ranging from 380–3,800 µg/L in 2015), and near surface water sampling locations SW40A and SW40B (with TCE concentrations ranging from 2.1 µg/L to 24 µg/L in 2015). Location PFM-31 was hydraulically downgradient of wells DMW-4S/I/D and MW-49S/I/D (with TCE concentrations ranging from 500–9,000 µg/L in 2015), and south of surface water sampling location SW-48A (with a relatively high TCE concentration of 24 µg/L in July 2015).

This study indicated an estimated total-mass VOC discharge of 2,900 grams per day to approximately seven acres of Frog Mortar Creek. Both this estimate, and the adjusted (for flow convergence) lower mass-discharge estimate of 100 grams per day, are higher than the estimated four grams per day used by three-dimensional, solute-transport model simulations conducted for the DRA (Tetra Tech, 2014). Site-specific information for sediment hydraulic-conductivity and anisotropy[1] is required to more accurately estimate the flow-convergence adjustment for mass discharge to Frog Mortar Creek.

During most of the study period, static-water elevations for loggers installed in deeper sediment were greater than the levels recorded by loggers installed at shallower depths, indicating upward water flow (i.e., from the deeper to shallower portions of the sediment). These water level measurements confirm the predominantly upward flow of groundwater to the creek, as indicated by the PFM study. However, note that the PFM study also indicates predominantly downward water flow in some areas of the creek.

### 2.2.10 2018 Groundwater Discharge Investigation

A sediment-bed passive flux meter (SBPFM) study was conducted in Frog Mortar Creek in November 2018, or approximately one year after the startup of the groundwater extraction and treatment system in late November 2017. The 2018 assessment was performed under stressed aquifer conditions while on-shore extraction wells were operational. This report presented current results and compared them to an identical assessment performed in 2015 under ambient aquifer conditions. This comparison of the events supplies a line of evidence to evaluate the groundwater extraction system's effectiveness in capturing the volatile organic compound (VOC) plume, and preventing its discharge to Frog Mortar Creek. The results obtained from the 2018 assessment also create baseline data for stressed aquifer conditions that can be compared to future results to evaluate the progress of the groundwater remedy.

Water levels in shallow creek sediment respond to lunar tides and variations in barometric pressure. During most of the 2018 study period, static water-elevations for loggers installed in deeper sediment were greater than the levels for loggers installed at shallower depths, indicating

[1]Exhibiting physical properties that are different when measured in different directions.

upward water flow (i.e., from deeper to shallower portions of the sediment). The predominant upward flow of groundwater to Frog Mortar Creek, as indicated by these water level measurements, agrees with the results of the 2018 evaluation of sediment-bed passive flux meters, which also indicate overall upward flow; note, however, the latter study also indicates predominantly downward water flow in some areas of the creek.

The mathematical average net groundwater flux was –1.3 centimeters per day (cm/day) which indicates a net downward flow through the Frog Mortar Creek sediment, although this value was strongly influenced by a single high value of –62.4 cm/day calculated at one location. The median net flux was 0.2 cm/day, which indicates an overall small net upward flow of groundwater to Frog Mortar Creek. The spatial distribution of the flow values indicated that the groundwater flow is generally evenly distributed within the Frog Mortar Creek sediment, and that no "clusters" or concentrated areas of flow exist, with the exception of the one outlier location.

The total measured mass discharge of volatile organic compounds for 2018 was 1.2 grams per day (g/day), and includes TCE at 0.35 g/day, *cis*-1,2-DCE at 0.57 g/day, and VC at 0.28 g/day. The VOC detections were mainly clustered in locations closest to the shoreline, although not all sampling locations near the shoreline had detections. This suggests that the discharge of the contaminant plume was limited and localized, and not site-wide.

The total measured mass VOC discharge in 2015 was 133.7 g/day, with TCE at 112.8 g/day, DCE at 11.8 g/day, and VC at 9.1 g/day. The total measured mass discharge of VOCs for 2018 was two orders of magnitude lower at 1.2 g/day, including TCE at 0.35 g/day, DCE at 0.57 g/day, and VC at 0.28 g/day. This substantial decrease was assumed to be due to changes in the local groundwater flow regime created by the activation of the groundwater extraction wells, resulting in significantly lower net flux in Frog Mortar Creek sediment. VOCs in groundwater are now primarily being captured by the extraction wells rather than being discharged to Frog Mortar Creek.

### 2.2.11 2019–2021 Frog Mortar Creek Investigations

Surface water samples for 2019 were at collected along nine transects at the same locations sampled in 2018, including the between-transect locations (i.e., SW46A, SW47A, SW48A, and

SW49A), plus the additional four samples collected at the eastern shoreline transect at Edwards Lane, for a total of 44 samples. In 2020 and 2021, the two southernmost transects (SW45 and SW39) were removed from the sampling program because the remaining seven transects fully covered the extent of the targeted area east of the DRA; in addition, beginning in 2020, the Edwards Lane transect was sampled annually in June only (Figure 2-13).

All surface water samples collected were analyzed for VOCs by SW846 Method 8260C including Freon-113 (1,1,2-trichloro-1,2,2 trifluoroethane) and Freon-22 (chlorodifluoromethane), and tentatively identified compounds (TICs). Between-transect locations and locations within the Edwards Lane transect were analyzed for VOCs only. Historically, western shoreline samples were also analyzed for hexavalent chromium and dissolved metals; however, these analytes were removed from the sampling program in 2020 because hexavalent chromium was not detected during any sampling events in 2018 or 2019, and results for metals had been relatively consistent over time. In addition, sampling for 1,4-dioxane was discontinued in 2017, due to its low and sporadic detection during the 2016 sampling rounds. All surface water samples were screened against the same criteria used during previous sampling rounds (i.e., USEPA NRWQC, Maryland AWQC, USEPA Biological Technical Advisory Group [BTAG] surface water screening benchmarks, and the MDE-approved site-specific swimming screening levels for TCE, cis-1,2-DCE, and VC).

***2019 Sampling Results—***The only cVOC detected in 10% or more of all Frog Mortar Creek samples collected in 2019 was *cis*-1,2-DCE, with a frequency of 11% (30 of 264 samples); VC was detected at a frequency of 5% (13 of 264 samples), and TCE was detected in five samples, at a frequency of 2%. All concentrations of these three cVOCs were detected below their lowest respective screening criteria (the site-specific levels for swimming) except for VC, which exceeded its swimming criterion at three near-shore locations (SW40A, SW42A, and SW46A) in March 2019 only.

Historically, TCE, cis-1,2- DCE, and VC were detected in both Frog Mortar Creek surface water and in DRA groundwater at concentrations above screening criteria, and these cVOCs were detected in DRA groundwater above MDE groundwater standards in 70%, 77%, and 65% (respectively) of samples collected in 2019. The maximum concentrations of these three VOCs

in the 2019 surface water samples were approximately 1,610 times (VC), 16,190 times (*cis*-1,2-DCE), and 174,070 times (TCE) lower than the maximum concentrations detected in DRA groundwater samples. Similar to previous sampling rounds, TCE, *cis*-1,2- DCE, and VC were detected at transects east and hydraulically downgradient of DRA monitoring wells with some of the highest concentrations of site-related cVOCs in shallow- and intermediate-depth groundwater (Tetra Tech, 2020).

***2020 Sampling Results*—**In 2020, VC was detected at a frequency of 7% (16 of 196 samples), *cis*-1,2-DCE was detected at a frequency of 7% (14 of 196 samples), and TCE was detected at a frequency of 1% (in 2 of 196 samples). TCE, *cis*-1,2-DCE, and VC were detected in 64%, 77%, and 61% (respectively) of DRA groundwater samples collected, at concentrations approximately 200,000 times (TCE), 62,500 times (*cis*-1,2-DCE), and 5,600 times (VC) higher than those detected in Frog Mortar Creek surface water. All TCE and cis-1,2-DCE concentrations detected in surface water in 2020 were well below their respective lowest (swimming) screening criteria. VC exceeded its swimming criterion (0.7 µg/L) in one sample only, at location SW42A (17 µg/L) in March 2020 (Tetra Tech, 2021a).

***2021 Sampling Results*—**TCE was detected in only one of 196 samples collected in 2021, at location SW49A in March, at a concentration (0.71 µg/L) more than one order of magnitude (10 times) below its lowest swimming screening criterion (10 µg/L). VC and *cis*-1,2-DCE were detected at respective frequencies of 12% (23 of 196 samples) and 8% (16 of 196 samples). TCE, cis-1,2-DCE, and VC were also detected in DRA groundwater samples collected in 2021, at respective frequencies of 74%, 82%, and 71%. The maximum concentrations of these three cVOCs in Frog Mortar Creek surface water samples were approximately 70,400 times (TCE), 20,000 times (*cis*-1,2-DCE), and 911 times (VC) lower than the maximum concentrations detected in the 2021 DRA groundwater samples (Tetra Tech, 2022a).

# SECTION 3
# MONITORING APPROACH AND METHODOLOGY

Previous surface-water sampling data for Frog Mortar Creek support the need for ongoing monitoring to assess the extent to which surface water is affected by groundwater emanating from the Dump Road Area (DRA). The data collected from the creek in 2022 support this ongoing effort and will also be used to assess the effectiveness of the DRA extraction, containment, and treatment system. The chlorinated volatile organic compounds (cVOCs) trichloroethene (TCE) *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride (VC), other volatile organic compounds (VOCs), and several metals, have been detected in previously collected Frog Mortar Creek surface water samples at concentrations exceeding ecological and/or human health screening criteria; these analytes have also been detected in groundwater at the DRA. The surface water sampling program implemented in 2022 consisted of four sampling rounds of 28 samples each, collected in March, July, August, and September 2022. Sampling locations for 2022 are shown on Figure 3-1.

Surface water data obtained from Frog Mortar Creek were evaluated against United States Environmental Protection Agency (USEPA) and Maryland screening levels. These screening criteria include USEPA national recommended water quality criteria (NRWQC), Maryland ambient water quality criteria (AWQC), USEPA Biological Technical Advisory Group (BTAG) surface water screening benchmarks, and Maryland Department of the Environment (MDE)-approved site-specific screening levels for swimming developed by Lockheed Martin Corporation (Lockheed Martin). Note that in the discussion below, all sampling locations share the "MSA-" prefix (e.g., "SW37" refers to transect MSA-SW37). This prefix is not included in the text below to increase readability.

## 3.1 SURFACE WATER SAMPLING

### 3.1.1 Surface Water Sampling and Chemical Analyses

For each round in 2022, four samples were collected along each of six transects spaced approximately 350 feet apart along the western shoreline of the creek; these transects are designated SW37, SW38, SW40, SW41, SW42, and SW43. Four additional near-shore samples were collected between transects SW42 and SW40 (SW46A), SW40 and SW38 (SW47A), SW38 and SW41 (SW48A), and SW41 and SW43 (SW49A). These four locations were first sampled in July 2015 to assess VOC concentrations between transects exhibiting the highest concentrations and were included in all 2022 sampling rounds. Surface water sampling locations for 2022 are shown on Figure 3-1.

As stated in Section 2, the northernmost transect (SW39) and the southernmost transect (SW45) in Frog Mortar Creek were also historically sampled until 2020, when they were removed from the sampling program. Surface water sampling results from 2021 prompted the project team to exclude the most recently sampled southernmost transect (i.e., SW44) and the Edwards Lane transect (located on the eastern shore of Frog Mortar Creek) from the 2022 sampling program. These locations were removed with Maryland Department of the Environment (MDE) approval, because cVOCs and other analytes of concern had not been detected in surface water since the December sampling episodes in 2018 (for SW39 and SW45) and 2019 (for Edwards Lane and SW44), and because the remaining six transects fully cover the extent of the targeted area west of the DRA.

Along each transect, one sample was collected near the shoreline ("A" sample), one was collected approximately 50 feet from the shoreline ("B" sample), one was collected approximately 100 feet from the shoreline ("C" sample), and one was collected approximately 200 feet from the shoreline ("D" sample). All sampling locations were surveyed in the Maryland State Plane North American Datum 1983 (in feet), using a handheld global positioning system receiver.

Table 3-1 outlines the sampling and chemical analysis program. Samples from the six western shoreline transects (SW37, SW38, SW40, SW41, SW42, and SW43) and near-shore locations SW46A through SW49A were analyzed for VOCs by USEPA SW846 Method 8260C, including Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane) and Freon 22 (chlorodifluoromethane).

Historically, western shoreline samples were also analyzed for hexavalent chromium and total and dissolved metals. In agreement with the MDE, and because hexavalent chromium was not detected during any sampling events in 2018 or 2019, hexavalent chromium and metals were removed from the sampling program in 2020.

Water quality parameters (including temperature, pH, specific conductance, salinity, turbidity, dissolved oxygen, and oxidation-reduction potential) were measured and recorded at the time of sampling, as was the water depth at all surface-water sampling locations. Sampling information was documented on sample log sheets (see Appendix A).

Water depth measurements were also obtained before and after sampling during each sampling round. Water depths before and after sampling during the most current monitoring round were 2.6 feet (0.79 meters) at 0755 hours and 2.9 feet (0.88 meters) at 0927 hours on September 15, 2022. Mean tidal flux in the Middle River, Maryland, area is approximately 1.6 feet (National Oceanic and Atmospheric Administration [NOAA], 2020). A 2011 study by Lockheed Martin sought to ascertain the effects of tides and sampling depths on contaminant concentrations in Frog Mortar Creek (Tetra Tech, 2012a). The tidal phase relative to the time of sample collection appears to influence the VOC concentrations detected, particularly in the samples collected 50 feet from shore. In general, VOC concentrations in "B-series" samples (collected 50 feet from shore) were greater at low tide than at high tide, irrespective of sampling depth. Therefore, all samples in 2022 were collected during low tide.

Samples were collected as grab samples from approximately one foot below the water surface using the direct-fill sampling technique. VOC samples were collected using a stainless steel discrete-interval sampler (also known as a "bacon bomb" sampler). The sampler was lowered to approximately one foot below the water surface, the check valve was engaged to allow the sampler to fill, the sampler was then brought to the surface, and the water was removed through a valve to fill three laboratory-cleaned, hydrochloric-acid preserved, 40-milliliter sample vials. The discrete-interval sampler was cleaned after each use by rinsing it with distilled water over the creek. No decontamination fluids were collected during sampling.

No duplicates were collected during any of the sampling rounds in 2022. In each sampling round, one trip-blank per cooler containing VOC samples was submitted for VOC analysis for quality

assurance/quality control (QA/QC) purposes. One equipment blank sample was also collected (from the discrete-interval sampler) for VOC analysis using laboratory supplied deionized water, per the quality assurance project plan (Tetra Tech, 2021b).

### 3.1.2 Documentation

A master site logbook was maintained as an overall record of field activities for the site. Sample documentation includes completed chain of custody forms and surface-water-specific sample log sheets. Chain of custody forms are standardized to summarize and document pertinent sample information, such as sample identification and type, matrix, date and time of collection, preservation, and the analysis requested. Sample custody procedures document sample acquisition and integrity. Surface water sample-log sheets are in Appendix A. Chain of custody forms, data validation reports, and laboratory analytical reports are in Appendix B (on compact disc).

### 3.1.3 Sample Nomenclature and Handling

Surface water samples were identified with a unique sample-identification tag. Surface water samples were labeled with an "MSA-SW" prefix, followed by the transect number, the profile location ("A," "B," "C," or "D"), and the six-digit sampling date. For example, a surface water sample collected on September 15, 2022, from transect SW37 near the shoreline (the "A" sampling location) was labeled MSA-SW37A-091522. Trip blanks were labeled with a "TB" prefix followed by the sample's six-digit submittal date (e.g., TB-091522). The equipment blanks were similarly labeled with a prefix of "MSA-SWEQB" followed by the six-digit sampling date.

Sample handling includes field-related considerations concerning the selection of sample containers, preservatives, allowable holding times, and analyses requested. Proper custody procedures were followed throughout all phases of sample collection and handling. Chain of custody protocols were used throughout sample handling to assure the evidentiary integrity of sample containers. These protocols demonstrate that the samples were handled and transferred in a manner that would prevent or detect possible tampering.

Sample containers were released under signature from the laboratory and accepted under signature by the sampler(s) or individual responsible for maintaining custody until the sample containers were transferred to the sampler(s). Transport containers returning to the laboratory were sealed

with strapping tape and a tamper-resistant custody seal. The custody seal contains the signature of the individual releasing the transport container, along with the date and time.

### 3.1.4 Equipment Decontamination

This project required minimal equipment decontamination. Both dedicated and disposable equipment were used for surface water sampling to reduce the need for decontamination, and to eliminate potential cross-contamination of samples. The discrete-interval sampler was cleaned after each use by rinsing with distilled water. Equipment was cleaned over the (creek) water after each sample had been collected. No decontamination fluids were collected during the sampling.

### 3.1.5 Waste Management

Investigation-derived waste (IDW) consisted of personal protective equipment (PPE) used during field sampling. PPE IDW was brushed off, placed in trash bags along with the disposable equipment, and disposed of in a facility trash receptacle designated by facility personnel.

## 3.2 DATA MANAGEMENT

Laboratory data-handling procedures met the requirements of the laboratory subcontract. All analytical and field data are maintained in project files, including copies of chain of custody forms, sample log forms, sampling location maps, and documentation of QA and data corrections.

### 3.2.1 Data Tracking and Control

A sample-tracking system was used from the beginning to the end of sampling. The field operations leader began and coordinated sample tracking before mobilizing the sampling team to the field. Preprinted sample-container labels generated before fieldwork began were reviewed to ensure that they were accurate and adhered to work plan requirements. The project manager coordinated with the analytical laboratory to ensure that the laboratory was aware of the number and type of samples and analyses that would be submitted.

During field sampling, the field operations leader forwarded the chain of custody form to a designated project assistant and to the laboratory. The project assistant confirmed that the chain of custody form provided the information required by the work plan. This allowed early detection of errors made in the field so that adjustments could be made before sample analyses.

After successful completion of all requested analyses, the laboratory submitted an electronic deliverable for each sample delivery group. When all electronic deliverables had been received from the laboratory, the project assistant checked the laboratory submittal to determine whether the laboratory had performed all analyses requested. All analyses requested for this project were performed.

### 3.2.2 Sample Information

Data from field measurements were recorded using appropriate sample log sheets and summarized in tabular form, as were the raw instrument-data from the laboratory. The field operations leader verified field data daily; laboratory data were verified by the group supervisor and then by the laboratory's QC/documentation department. Sample log sheets are in Appendix A.

### 3.2.3 Project Data Compilation

The analytical laboratory generated an Adobe® Acrobat® portable document format (PDF) file of the analytical data package, as well as an electronic database deliverable. The electronic database was checked against the PDF file provided by the laboratory and updated as required, based on data qualifier flags applied during data validation. All data, such as units of measure and chemical nomenclature, were corrected as necessary to be consistent with the project database.

### 3.2.4 Geographical Information System

Data management systems for this investigation consists of a relational database and geographic information system (GIS) to manage environmental information pertaining to Martin State Airport (MSA) housed in the energy, environment, safety, and health (EESH) GIS system. The relational database stores chemical, geological, hydrogeological, and other environmental data collected during environmental investigations. The GIS, created from the relational database, contains subsets of the larger data pool. The GIS allows environmental data to be posted onto base maps to graphically represent project information. Compiled sampling, chemical, and positional data from this investigation were incorporated into the EESH GIS system.

## 3.3 DATA REVIEW

Data from the laboratory were entered into a sample database and evaluated against risk-based criteria. Data validation (evaluating data completeness, holding times, calibrations, precision, accuracy, laboratory- and field-blank contamination, and detection limits) was completed by the Tetra Tech chemical-data-validation group in Pittsburgh, Pennsylvania concurrent with the data evaluation. These reviews were based on USEPA national functional guidelines for organic data review (USEPA, 2020) and the specifics of the analytical methods used.

Sampling data consist of surface-water-sample chemical results. Data-validation reports, full laboratory reports, and chain of custody forms are in Appendix B (on compact disc) as PDF files. Full analytical data tables for Frog Mortar Creek surface water samples, including nondetects, collected for the latest (September) sampling round (Table C-1), and for all data collected in 2022 (Table C-2), are in Appendix C. These data were validated as acceptable for their intended uses (i.e., risk screening and risk assessment), except for data that were qualified as unreliable (i.e., data with UR flags). The data validation applied the following data qualifiers (flags) to the chemical results presented in this report:

*J* The analyte is considered present in the sample but at an estimated value that may not meet highest accuracy or precision standards. In this program, samples were qualified with "*J*" because quantitation was above the method detection limit but below the laboratory reporting-limit.

*U* Not detected; the analyte is considered not detected at the reported value.

*NJ* The analyte has been "tentatively identified" or is "presumptively" present and the associated numerical value is the estimated concentration in the sample.

*UR* The sample result (nondetect) is 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.

*UJ* The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.

Several of the data qualifiers above appear in the chemical results tables and figures in Section 4; all data qualifiers appear in Appendices B and C.

The data validation reports in Appendix B indicate that percent differences measured during some initial and continuing calibration verifications conducted for 2022 surface water samples exceeded laboratory QC limits, so the detected and nondetect results for affected analytes in associated samples were qualified as estimated (*J* and UJ, respectively) The analyte 2-chloroethyl vinyl ether cannot be reliably recovered in acid-preserved samples; since all samples collected in 2022 were acid preserved, the nondetect results for 2-chloroethyl vinyl ether were qualified as rejected (UR). A tentatively identified compound (TIC) search was performed for the analyte chlorodifluoromethane, but it was not detected above its reporting limit in 2022 samples, so nondetect results were qualified as estimated (UJ).

Acetone was detected in the March 2022 equipment blank, and chloroform was detected in the September 2022 trip blank and in the July 2022 equipment blank, but no action was taken because these analytes were not detected in associated samples. Similarly, hexachlorobutadiene (1.19 µg/L) was detected in the July 2022 laboratory method blank, but no action was taken as it was not detected in the affected samples. No analytes were detected in both the trip and equipment blanks during the August 2022 sampling event, in the March and July 2022 trip blanks, and in the September 2022 equipment blank. These issues are described as minor in the data validation reports (Appendix B), and the data generated during the 2022 Frog Mortar Creek sampling episodes are acceptable for their intended use.

# SECTION 4
# RESULTS

Validated surface-water chemical data were used to generate a statistical summary table (Table 4-1) and a detection table (Table 4-2) for analytes detected in surface water samples collected in 2022. For comparison, Table 4-1 also lists analytes detected in the Dump Road Area (DRA) groundwater sampled in 2022; statistics for surface water are on the left-hand side of the table under the light gray header, and statistics for groundwater are on the right-hand side of the table under the darker gray header. Table 4-2 lists the surface water sampling results for trichloroethene (TCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride (VC), with comparisons to chemical-specific screening levels by sampling location; these results are discussed below. Table C-2 in Appendix C includes all analytical data for the Frog Mortar Creek surface water samples collected in 2022, including nondetects, validation qualifiers, and analytical detection limits. The Section 4 tables are based on the data in Table C-2. Appendix D provides time-series plots of TCE, *cis*-1,2-DCE, and VC concentrations for data collected from 2010–2022, including plots for transects sampled previously that were not sampled in 2022 (i.e., transects MSA-SW39, MSA-SW44, MSA-SW45, and the Edwards Lane transect). Note that in the discussion below, all sampling locations share the "MSA-" prefix; this prefix is not included to increase readability (e.g., "SW37" refers to transect MSA-SW37).

Sampling results in Table 4-2 are screened against the United States Environmental Protection Agency (USEPA) Region 3 Biological Technical Advisory Group (BTAG) freshwater screening-benchmarks (USEPA, 2006), USEPA national recommended water quality criteria (NRWQC) for acute and chronic aquatic-organism exposures and aquatic-organism consumption (USEPA, 2020b), and Maryland ambient water quality criteria (AWQC) for acute and chronic aquatic-organism exposures and aquatic-organism consumption (Code of Maryland Regulations, 2016). TCE, *cis*-1,2-DCE, and VC results are also compared to site-specific screening levels developed by Lockheed Martin Corporation (Lockheed Martin) at the request of the Maryland Department of the Environment (MDE); these values are used to assess risks posed to recreational

users of Frog Mortar Creek. These screening levels were developed to protect the health of swimmers near the DRA shoreline, assuming that they have long-term exposure to surface water (i.e., assumed swimming exposure of four hours per day, 70 days per year, for 30 years). These swimming criteria are used because they provide the most conservative (i.e., most protective of human health) screening levels for Frog Mortar Creek.

## 4.1 COMPARISON OF FROG MORTAR CREEK SURFACE-WATER RESULTS TO DUMP ROAD AREA GROUNDWATER RESULTS

Table 4-1 summarizes concentrations of the volatile organic compounds (VOCs) detected in Frog Mortar Creek surface water samples and in DRA groundwater samples collected in 2022. The results are grouped by analytical category (i.e., VOCs and tentatively identified compounds [TICs]). Table 4-1 shows that all VOCs detected in the 2022 Frog Mortar Creek surface water samples (except for the TIC 2-ethyl-1-hexanol) were also detected in DRA groundwater samples collected in May/June 2022.

Several VOCs were detected in at least one of the 112 samples collected from Frog Mortar Creek in 2022, at the following indicated frequencies: toluene (10%), total xylenes (7%), *m*+*p*-xylenes (7%), *o*-xylene (2%), benzene (1%), ethylbenzene (1%), naphthalene (1%), 1,2,3-trimethylbenzene (1%), and 1,2,4-trimethylbenzene (1%). Toluene was the only VOC detected in more than 10 samples (i.e., 11 of 112 samples) collected in 2022. Note that all VOCs in Frog Mortar Creek in 2022 were detected in the September sampling episode; no VOCs were detected in March, July, or August 2022.

Historically, the chlorinated volatile organic compounds (cVOCs) TCE, *cis*-1,2-DCE, and VC have been detected in both Frog Mortar Creek surface water and in DRA groundwater at concentrations above screening criteria; however, these three cVOCs were not detected in surface water samples collected from Frog Mortar Creek in 2022. However, TCE, *cis*-1,2-DCE, and VC were detected in DRA groundwater samples at frequencies of 67%, 76%, and 64% (respectively) in 2022, and at respective maximum concentrations of 20,000 micrograms per liter (µg/L), 23,000 µg/L, and 6,800 µg/L (Table 4-1).

## 4.2 VOLATILE ORGANIC COMPOUNDS

As shown in Table 4-1, nine VOCs and the TIC 2-ethyl-1-hexanol were detected in the surface water samples collected in 2022, with toluene, *m*+*p*-xylenes, and total xylenes detected most frequently, as discussed above.

Surface water frequencies-of-detection for toluene and *m*+*p*-xylenes (10% and 7%, respectively), were similar to their frequencies in groundwater (both at 10%). Individual detection frequencies for the other seven VOCs detected in surface water in 2022 were lower than those in groundwater. In general, detection frequencies in both surface water and in groundwater were lower than those detected in 2021. Additional years of DRA groundwater data are required to confirm the impact of the treatment plant on contaminant concentrations, but these results indicate that contaminants in groundwater are being mitigated via treatment before entering the creek. Petroleum-related VOCs (toluene, naphthalene, xylenes, and benzene among others) were detected in 11 of 28 samples collected during the September 2022 sampling round, when high boat traffic is common in Frog Mortar Creek. Occurrences and distributions of the primary Frog Mortar Creek cVOCs are discussed in more detail in the following sections.

### 4.2.1 Trichloroethene

As stated earlier, TCE was not detected in Frog Mortar Creek surface water samples collected in 2022. TCE was last detected in March 2021 (0.71 µg/L at SW49A) and was detected at estimated (*J*-qualified) concentrations twice in December (only) in 2020, at locations SW41 (0.15*J* µg/L) and SW49A (0.29*J* µg/L). Locations SW41A and SW49A are slightly south of the DRA, and are east of and hydraulically downgradient of DRA monitoring wells MW-49S/I/D, MW-50S/I/D, MW-50S/I/D, DMW-4S/I/D, and DMW-5S/I/D, which contain some of the highest concentrations of site-related cVOCs in shallow- and intermediate-depth groundwater.

The sole TCE concentration in 2021, and both TCE detections in 2020, occurred in samples collected at near-shore "A" sampling locations. This is generally consistent with results reported for historical sampling events, where the highest TCE concentrations were detected at near-shore sampling locations and decreased with increasing distance from the shoreline.

### 4.2.2 *cis*-1,2-Dichloroethene and Vinyl Chloride

As stated earlier, *cis*-1,2-DCE and VC were not detected in Frog Mortar Creek in 2022. When previously detected, concentrations of these cVOCs followed the same general location trends as TCE, but were generally detected more frequently (at 8% and 12%, respectively, in 2021) as compared to TCE (1% in 2021). VC and *cis*-1,2-DCE were both detected in the March and December 2021 sampling rounds, and the maximum concentrations of both *cis*-1,2-DCE (2.2 µg/L at SW49A) and VC (4.5 µg/L at SW40A) were detected at near-shore sampling locations in March 2021. All *cis*-1,2-DCE concentrations detected in 2021 were less than its site-specific swimming and BTAG ecological screening levels. However, VC exceeded its site-specific swimming screening-level (0.7 µg/L) 12 times in 2021, but only during the cold weather months of March and December. Detections of *cis*-1,2-DCE and VC in 2021 extended farther north than the sole 2021 TCE detection (0.71 µg/L at SW49A), and occurred most frequently along the SW42 transect.

# SECTION 5
# SUMMARY

The following summarizes Lockheed Martin Corporation's (Lockheed Martin's) Frog Mortar Creek surface water investigation and findings for 2022:

- Four rounds of surface water samples were collected from Frog Mortar Creek in 2022 in March, July, August, and September. Twenty-eight surface water samples were collected from the western shoreline in each sampling round.

- All Frog Mortar Creek samples were analyzed for volatile organic compounds (VOCs).

- The data were validated in accordance with the United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Organic Superfund Data Review* (USEPA, 2020), and the specifics of the analytical methods used.

- Sampling results were screened against: (1) United States Environmental Protection Agency Region 3 Biological Technical Advisory Group (BTAG) ecological screening-benchmarks for freshwater; (2) United States Environmental Protection Agency national recommended water quality criteria (NRWQC) for acute and chronic aquatic-organism exposures and for human health aquatic-organism-consumption; (3) Maryland ambient water quality criteria (AWQC) for acute and chronic aquatic-organism exposures and for human health aquatic-organism-consumption; and (4) site-specific screening levels developed to evaluate risks to recreational swimmers from exposure to the three most frequently detected volatile organic compounds in surface water: trichloroethene (TCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride (VC).

- Toluene, *m*+*p*-xylenes, and total xylenes were the most frequently detected volatile organic compounds in 2022 Frog Mortar Creek surface water samples, at respective frequencies of 10% (11 of 112 samples), 7% (eight of 112 samples) and 7% (eight of 112 samples). Additional volatile organic compounds detected (in only one or two samples each) included benzene, ethylbenzene, naphthalene, *o*-xylene, 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene and the tentatively identified compound 2-ethyl-1-hexanol; all of these volatile organic compounds were also detected in groundwater, except for 2-ethyl-1-hexanol.

- All volatile organic compounds detected in Frog Mortar Creek surface water were detected during the September 2022 sampling round; no volatile organic compounds were detected in March, July, or August 2022. Volatile organic compounds detected in September were

petroleum related and most likely attributable to high boat traffic, common for the late summer months.

- Trichloroethene, cis-1,2-dichloroethene, and vinyl chloride were not detected in any sample collected from Frog Mortar Creek in 2022.

- The results from 2022 continue to demonstrate that contaminants in groundwater are being mitigated via treatment before entering the creek.

- The Maryland Department of the Environment lifted the Frog Mortar Creek water contact advisory on December 12, 2022 (MDE, 2022), based on improvements in creek water quality resulting from the operation of the groundwater extraction and treatment system in the Dump Road Area of Martin State Airport. The remaining advisory signs were removed from the creek on December 19, 2022.

# SECTION 6
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# FIGURES


Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2017 ESRI and its data suppliers).

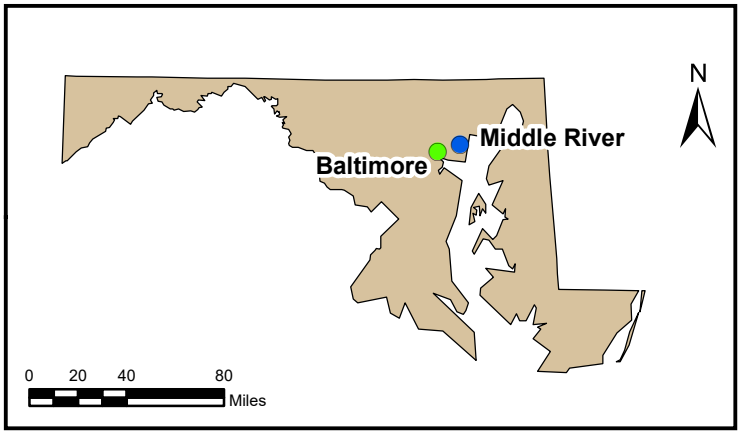



**FIGURE 1-1**

**MARTIN STATE AIRPORT AND DUMP ROAD AREA LOCATION MAP**

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

| DATE MODIFIED: | CREATED BY: |
|---|---|
| 01/08/20 | PFO |

TETRA TECH

Map Document: (P:\GIS\Lockheed_MSA\MapDocs\MXD\gsp_sitemap_jan2020.mxd)
01/08/20 -- PFO


Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2017 ESRI and its data suppliers).

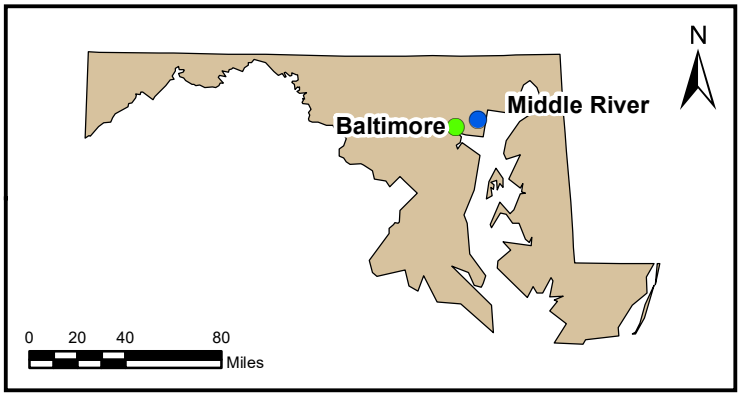



**FIGURE 2-1**

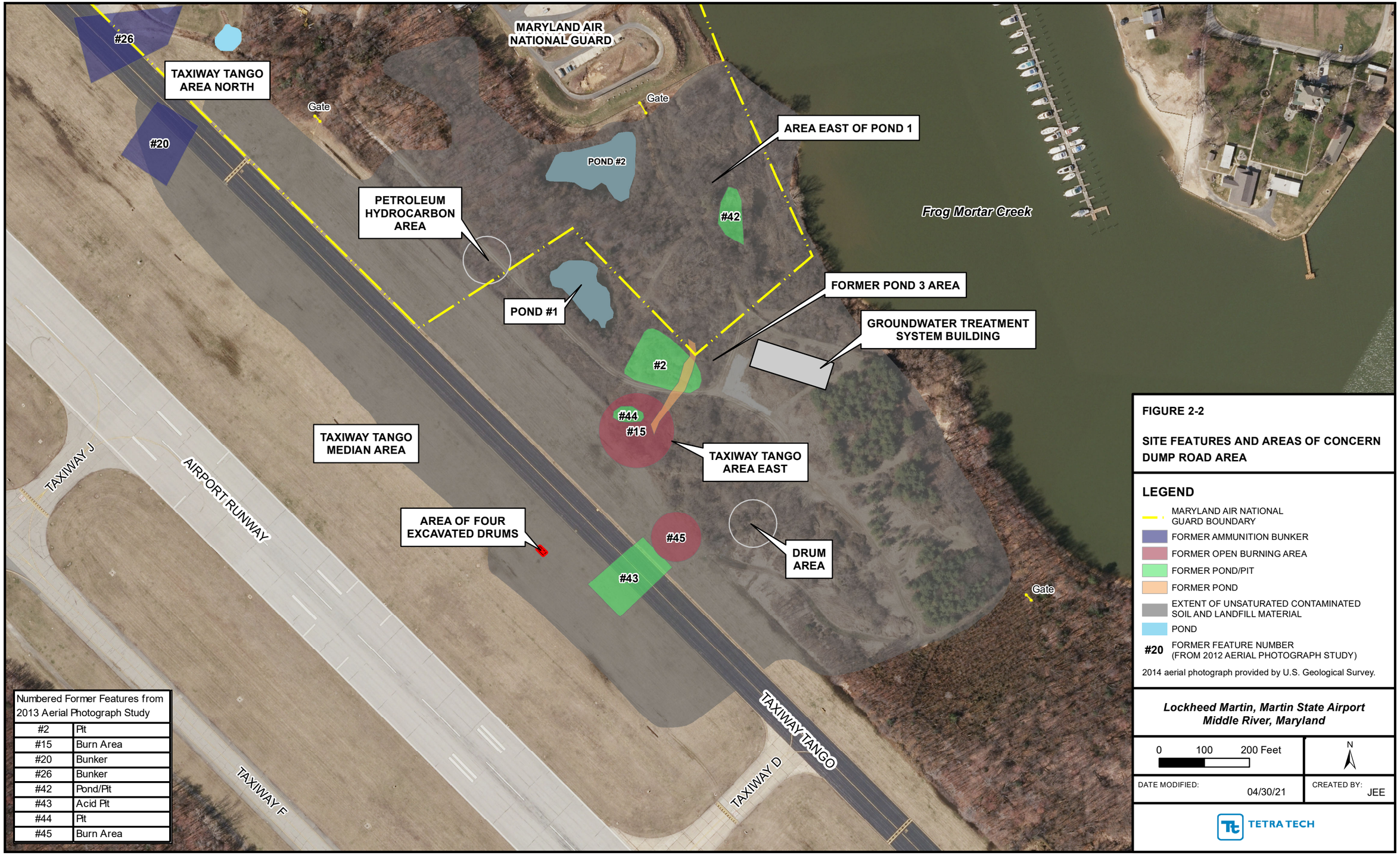
**MARTIN STATE AIRPORT AND SURROUNDING FEATURES**

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

| DATE MODIFIED: | CREATED BY: |
|---|---|
| 01/08/20 | JEE |

TETRA TECH

Map Document: (P:\GIS\Lockheed_MSA\MapDocs\MXD\msa_sitemap_jan2020.mxd)
01/08/20 -- PFO




| Numbered Former Features from 2013 Aerial Photograph Study | |
|---|---|
| #2 | Pit |
| #15 | Burn Area |
| #20 | Bunker |
| #26 | Bunker |
| #42 | Pond/Pit |
| #43 | Acid Pit |
| #44 | Pit |
| #45 | Burn Area |

**FIGURE 2-2**

**SITE FEATURES AND AREAS OF CONCERN DUMP ROAD AREA**

**LEGEND**

- MARYLAND AIR NATIONAL GUARD BOUNDARY
- FORMER AMMUNITION BUNKER
- FORMER OPEN BURNING AREA
- FORMER POND/PIT
- FORMER POND
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL
- POND
- #20 FORMER FEATURE NUMBER (FROM 2012 AERIAL PHOTOGRAPH STUDY)

2014 aerial photograph provided by U.S. Geological Survey.

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 100 200 Feet

N

DATE MODIFIED: 04/30/21

CREATED BY: JEE

TETRA TECH

Map Document: (P:\GIS\Lockheed_MSA\MapDocs\MXD\dra_study_areas_features_aug2014_v2.mxd)
04/30/21 -- PFO

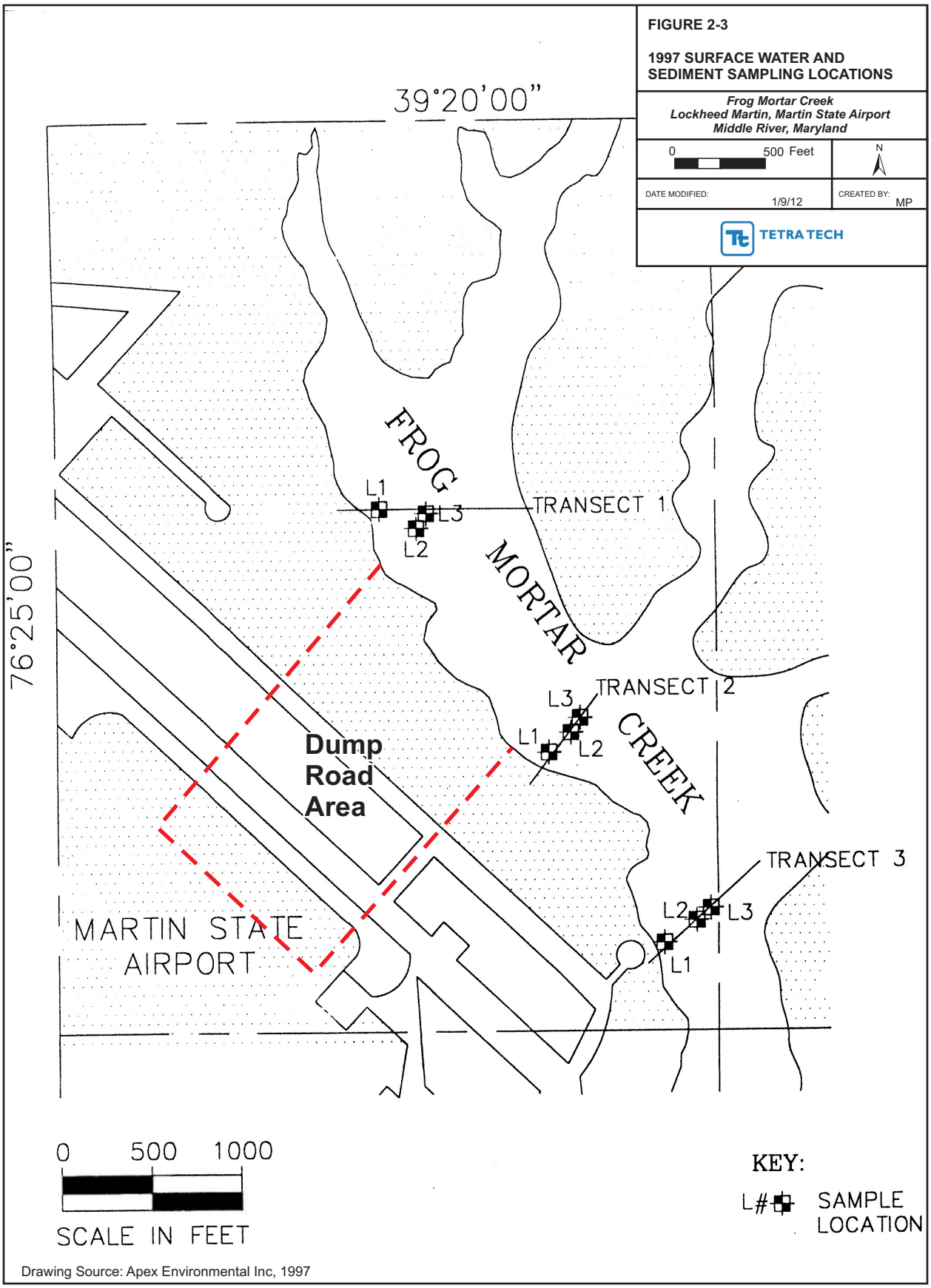


FIGURE 2-3
1997 SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS
Frog Mortar Creek
Lockheed Martin, Martin State Airport
Middle River, Maryland
0 500 Feet
N
DATE MODIFIED: 1/9/12
CREATED BY: MP
TETRA TECH
39°20'00"
76°25'00"
FROG MORTAR CREEK
TRANSECT 1
TRANSECT 2
TRANSECT 3
L1
L2
L3
Dump Road Area
MARTIN STATE AIRPORT
0 500 1000
SCALE IN FEET
KEY:
L# SAMPLE LOCATION
Drawing Source: Apex Environmental Inc, 1997
K:\Graphics\Lockheed\MSA\FMC Sample Locations 1997_revised 1 9 12.cdr

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\MSA 2004 Surface Water and Sediment Samples_revised 1 9 12.mxd)
1/9/2012 -- 3:37:54 PM

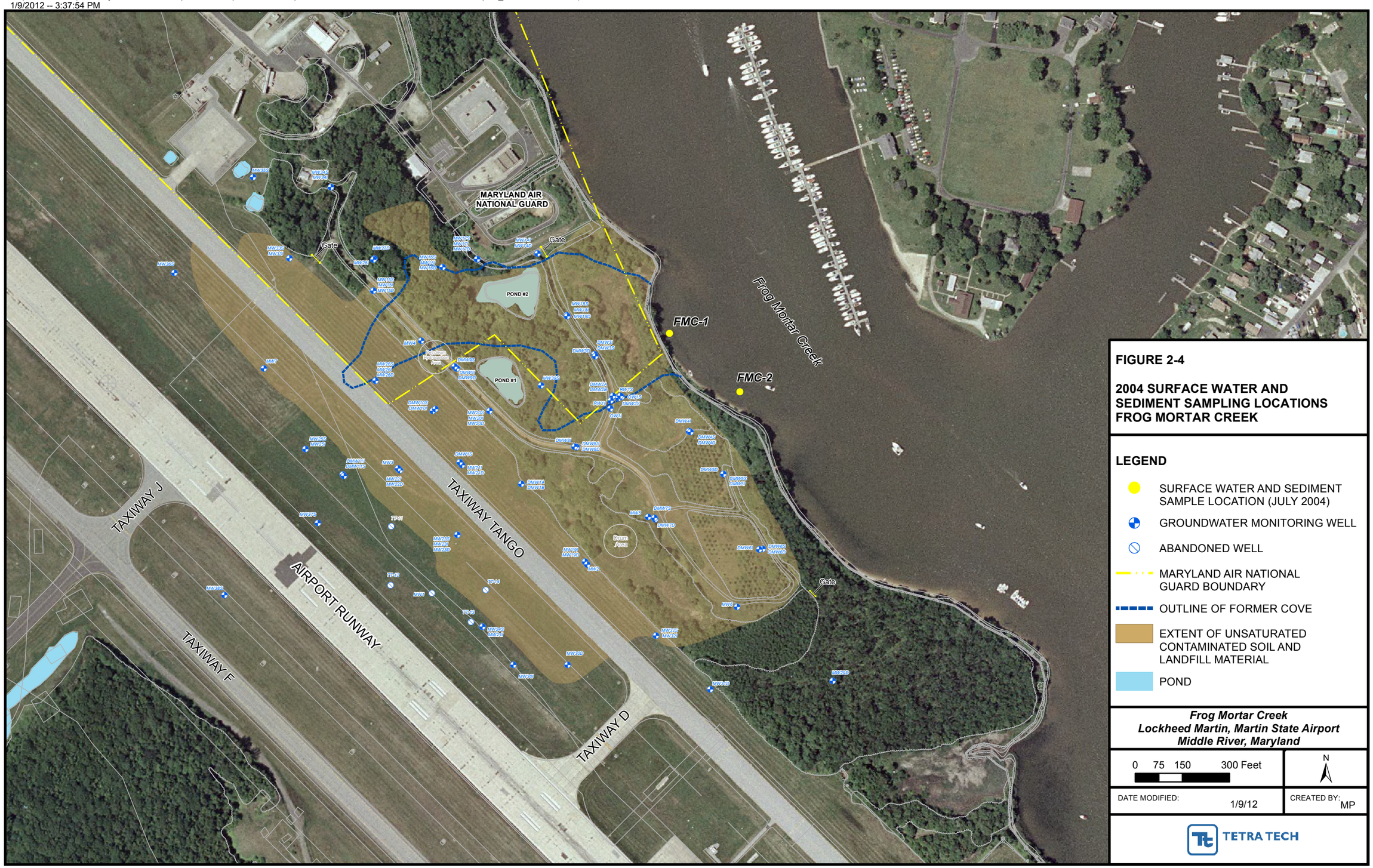



**FIGURE 2-4**

**2004 SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS FROG MORTAR CREEK**

**LEGEND**

- SURFACE WATER AND SEDIMENT SAMPLE LOCATION (JULY 2004)
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL
- POND

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 75 150 300 Feet

N

DATE MODIFIED: 1/9/12

CREATED BY: MP

TETRA TECH

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\MSA 2007 Trident Sample Locations.mxd)
4/18/2011 -- 12:06:29 PM

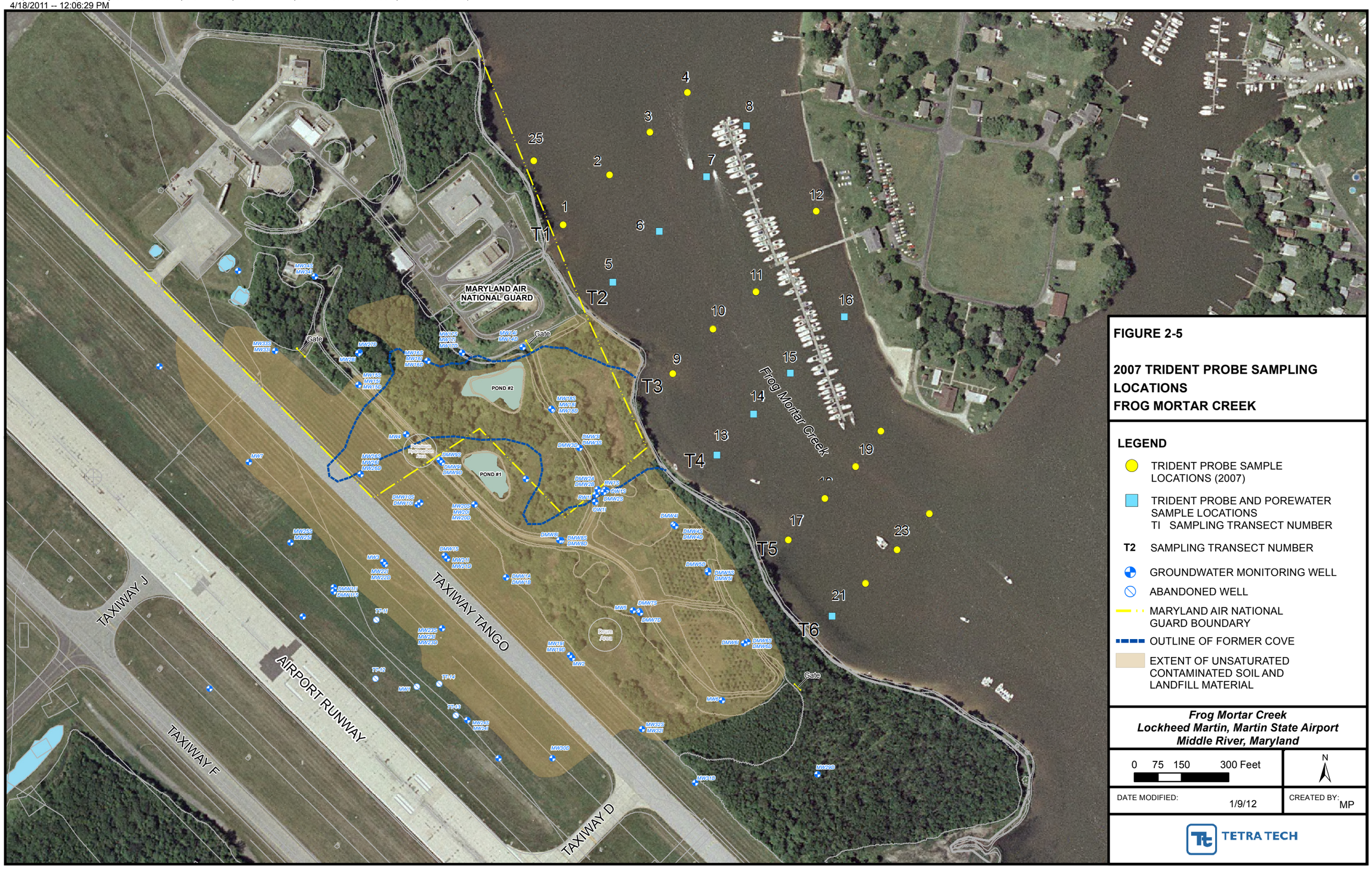



**FIGURE 2-5**

**2007 TRIDENT PROBE SAMPLING LOCATIONS**
**FROG MORTAR CREEK**

**LEGEND**

- TRIDENT PROBE SAMPLE LOCATIONS (2007)
- TRIDENT PROBE AND POREWATER SAMPLE LOCATIONS
  TI SAMPLING TRANSECT NUMBER
- T2 SAMPLING TRANSECT NUMBER
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 75 150 300 Feet

N

DATE MODIFIED: 1/9/12

CREATED BY: MP

TETRA TECH

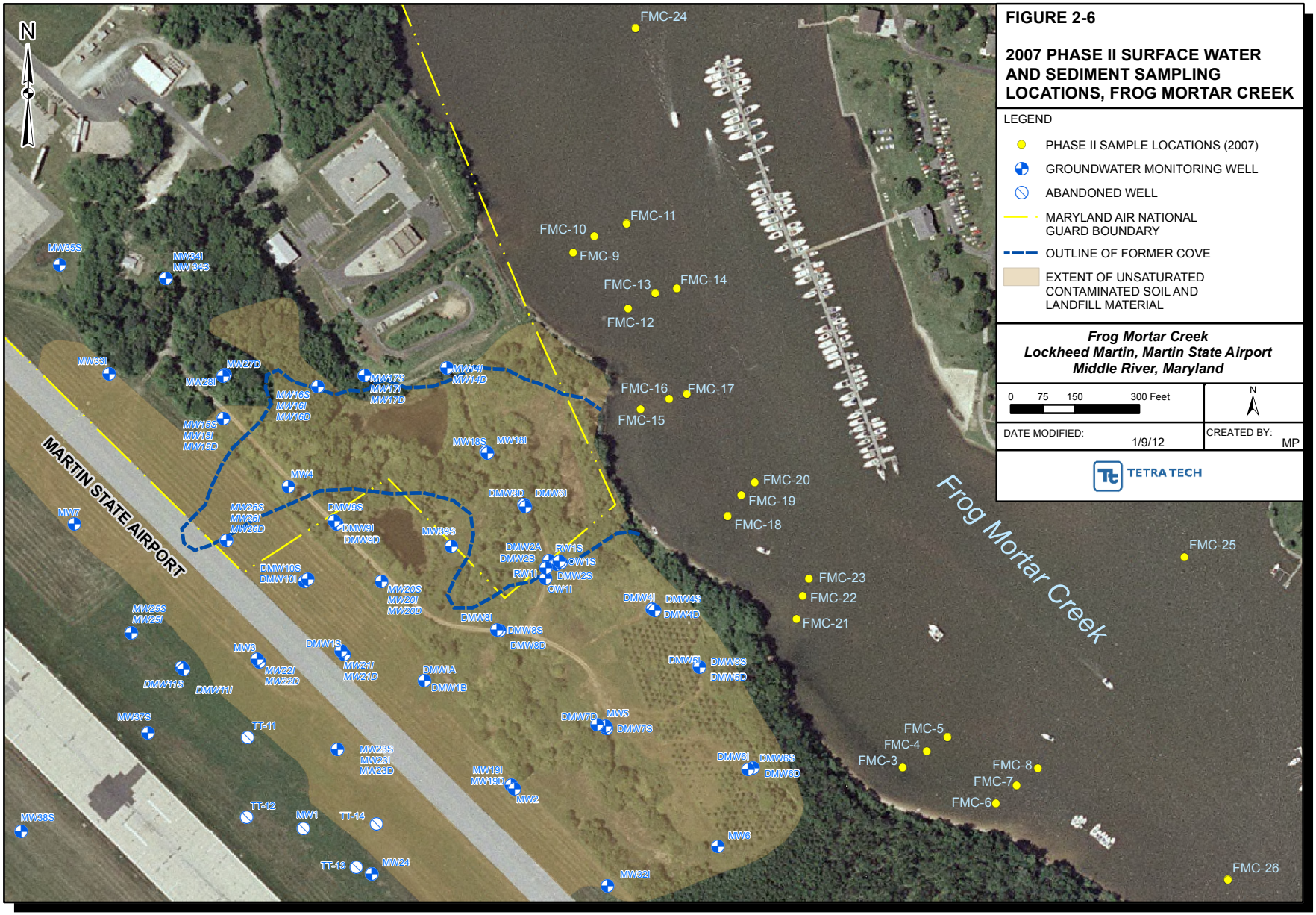



**FIGURE 2-6**

**2007 PHASE II SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS, FROG MORTAR CREEK**

LEGEND

- PHASE II SAMPLE LOCATIONS (2007)
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 75 150 300 Feet

N

DATE MODIFIED: 1/9/12

CREATED BY: MP

TETRA TECH

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\
Frog Mortar samples_figure 2-4.mxd) 4/15/2011 -- 4:23:03 PM

**FIGURE 2-7**

**2007- 2008 PHASE III SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS FROG MORTAR CREEK**

LEGEND

- PHASE III SAMPLE LOCATIONS (2008)
- MSA GW WELLS
- ABANDONED WELL
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL
- MARYLAND AIR NATIONAL GUARD BOUNDARY

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 100 200 400 Feet

N

DATE MODIFIED: 1/9/12

CREATED BY: MP

TETRA TECH

FMC-27
FMC-28
FMC-29
FMC-30
FMC-31
FMC-32
FMC-33
FMC-10
FMC-09
FMC-13
FMC-12
FMC-16
FMC-15
FMC-19
FMC-18
FMC-22
FMC-21
FMC-34
FMC-35
FMC-36

Frog Mortar Creek

MARTIN STATE AIRPORT

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\Phase III Frog Mortar samples Tabloid_041811.mxd)
4/18/2011 -- 1:47:31 PM

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\MSA Surface Water Samples 7 28 11.mxd)
7/28/2011 -- 9:19:16 AM


**FIGURE 2-8**

**JULY 2010 SURFACE WATER SAMPLING LOCATIONS**

**LEGEND**

- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- SURFACE WATER SAMPLE LOCATION (2010)
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL
- POND

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 75 150 300 Feet

N

DATE MODIFIED: 1/9/12

CREATED BY: MP

TETRA TECH

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\MSA Surface Water Samples June_Sept_Dec_2011 revised022713.mxd)
2/27/2013 -- 10:06:39 AM


**FIGURE 2-9**

**2011 QUARTERLY SURFACE WATER SAMPLING LOCATIONS FROG MORTAR CREEK**

**LEGEND**

- ⊗ MARCH, JUNE, SEPTEMBER, AND DECEMBER SURFACE WATER SAMPLE LOCATION (1 FOOT DEPTH BELOW WATER SURFACE)
- ○ JUNE, SEPTEMBER, AND DECEMBER SURFACE WATER SAMPLE LOCATION (1 FOOT DEPTH BELOW WATER SURFACE)
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL
- POND

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 75 150 300 Feet

N

DATE MODIFIED: 1/4/12

CREATED BY: MP

TETRA TECH

Map Document: (K:\GProject\MartinStateAirport-LMC\MapDocs\MXD\Maps\MSA Surface Water Samples August2011.mxd)
9/12/2011 -- 2:34:00 PM


**FIGURE 2-10**

**AUGUST 2011 SURFACE WATER SAMPLING LOCATIONS FROG MORTAR CREEK**

**LEGEND**

- AUGUST 2011 SURFACE WATER SAMPLE LOCATION
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- OUTLINE OF FORMER COVE
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL
- POND

"A" 1 foot below surface
"B" 1 foot below surface and 1 foot above bottom
"C" 1 foot below surface, midpoint of water column, and 1 foot above bottom

***Frog Mortar Creek***
***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 75 150 300 Feet

N

DATE MODIFIED: 1/4/12

CREATED BY: MP

TETRA TECH


**FIGURE 2-11**

**2012-2019 SURFACE WATER SAMPLING LOCATIONS FROG MORTAR CREEK**

## LEGEND

- SURFACE WATER SAMPLING LOCATION
- 2015/2016 ADDED SURFACE WATER SAMPLING LOCATION
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- OUTLINE OF FORMER COVE
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL - DUMP ROAD AREA
- POND

2014 aerial photograph provided by U.S. Geological Survey.

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 150 300 Feet

N

DATE MODIFIED: 12/31/20

CREATED BY: JEE

TETRA TECH

Map Document: (P:\GIS\Lockheed_MSA\MapDocs\MXD\fmc_sw_samplocs_2012-2015_review.mxd)
02/23/17 -- JEE


**FIGURE 2-12**

**2015 NET FLUXES FOR TRICHLOROETHENE, DICHLOROETHENE AND VINYL CHLORIDE IN GROUNDWATER PASSIVE FLUX METER STUDY FROG MORTAR CREEK**

## LEGEND

**NET FLUX (MG PER $M^2$ PER DAY)**

- DATA NOT AVAILABLE (PFM NOT RECOVERED)
- 0.0
- >0 - 1
- >1 - 10
- >10 - 100
- >100 - 1000
- >1000 - 2742.3

TRICHLOROETHENE
DICHLOROETHENE
VINYL CHLORIDE

WATER LEVEL DATA LOGGER LOCATION

QUARTERLY AND SUMMER MONTHS SURFACE WATER SAMPLE LOCATION

SW-42 TRANSECT NUMBER FOR QUARTERLY AND SUMMER MONTHS SURFACE WATER SAMPLE LOCATION

GROUNDWATER MONITORING WELL

OUTLINE OF FORMER COVE

EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL - DUMP ROAD AREA

MARYLAND AIR NATIONAL GUARD BOUNDARY

MG = MILLIGRAMS
$M^2$ = SQUARE METER

2017 AERIAL PHOTOGRAPH PROVIDED BY THE STATE OF MARYLAND.

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 80 160 Feet

N

DATE MODIFIED: 02/25/22

CREATED BY: JEE

TETRA TECH

Map Document: (P:\GIS\Lockheed_MSA\MapDocs\MXD\fmc_net_fluxes_aug2015.mxd)
02/25/22 -- JEE


**FIGURE 2-13**

**2020-2021 SURFACE WATER SAMPLING LOCATIONS, FROG MORTAR CREEK**

## LEGEND

- SURFACE WATER SAMPLE LOCATION
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- OUTLINE OF FORMER COVE
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL - DUMP ROAD AREA
- POND

2017 aerial photograph provided by the State of Maryland.

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 150 300 Feet

N

DATE MODIFIED: 02/25/22

CREATED BY: JEE

TETRA TECH

Map Document: GER (P:\GIS\Lockheed_MSA\MapDocs\MXD\fmc_sw_samplocs_202006.mxd)
02/25/22 -- PFO


**FIGURE 3-1**

**2022 SURFACE WATER SAMPLING LOCATIONS, FROG MORTAR CREEK**

## LEGEND

- SURFACE WATER SAMPLING LOCATION
- GROUNDWATER MONITORING WELL
- ABANDONED WELL
- OUTLINE OF FORMER COVE
- MARYLAND AIR NATIONAL GUARD BOUNDARY
- EXTENT OF UNSATURATED CONTAMINATED SOIL AND LANDFILL MATERIAL - DUMP ROAD AREA
- POND

2017 aerial photograph provided by the State of Maryland.

***Lockheed Martin, Martin State Airport***
***Middle River, Maryland***

0 150 300 Feet

N

DATE MODIFIED: 06/15/22

EDITTED BY: LMW

TETRA TECH

Map Document: (K:\Patrick\GIS\Lockheed_MSA\MapDocs\MXDs\fmc_sw_samplocs_prop2022.mxd)
09/03/21 -- PFO

# TABLES

**Table 3-1 List of Samples and Chemical Analyses for Surface Water, 2022**

**Table 4-1 Statistical Summary for Analytes Detected in Frog Mortar Creek Surface Water Samples and Dump Road Area Groundwater Samples, 2022**

**Table 4-2 Frog Mortar Creek Surface Water Sampling Results for Volatile Organic Compounds, 2022**

**Table 3-1**
**List of Samples and Chemical Analyses for Surface Water, 2022**
**Frog Mortar Creek, Martin State Airport**
**Middle River, Maryland**

| Surface water sampling location/ Transect No.[1] | Analytical Requirements<br>Volatile organic compounds<br>(USEPA SW846 8260C)<br>3 × 40 mL vials with hydrochloric acid |
|---|---|
| MSA-SW37 | ✓ |
| MSA-SW38 | ✓ |
| MSA-SW40 | ✓ |
| MSA-SW41 | ✓ |
| MSA-SW42 | ✓ |
| MSA-SW43 | ✓ |
| MSA-SW46 | ✓ |
| MSA-SW47 | ✓ |
| MSA-SW48 | ✓ |
| MSA-SW49 | ✓ |

1. Four samples, at locations -A, -B, -C, and -D, were collected from each transect, except for sampling locations SW46, SW47, SW48, and SW49, where only western shore "A" samples were collected.

mL – milliliter

USEPA – United States Environmental Protection Agency

**Table 4-1**
**Statistical Summary for Analytes Detected in Frog Mortar Creek Surface Water Samples and in Dump Road Area Groundwater Samples, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**

| Annual (2022) Frog Mortar Creek Surface Water Samples | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter | Frequency of Detection | | Minimum concentration detected | Maximum concentration detected | Sample with maximum detected concentration | Average of detected results | Average of all results |
| | Number | Percent | | | | | |
| **Volatile organic compounds (µg/L)** | | | | | | | |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3-TRIMETHYLBENZENE | 1/112 | 1 | 1.6 J | 1.6 J | MSA-SW43B-091522 | 1.6 | 0.17 |
| | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-TRIMETHYLBENZENE | 1/112 | 1 | 4.5 | 4.5 | MSA-SW43B-091522 | 4.5 | 0.30 |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| BENZENE | 1/112 | 1 | 2.2 | 2.2 | MSA-SW43B-091522 | 2.2 | 0.23 |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| ETHYLBENZENE | 1/112 | 1 | 2.1 | 2.1 | MSA-SW43B-091522 | 2.1 | 0.23 |
| | -- | -- | -- | -- | -- | -- | -- |
| M+P-XYLENES | 8/112 | 7 | 0.43 J | 7.7 | MSA-SW43B-091522 | 1.52 | 0.30 |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| NAPHTHALENE | 1/112 | 1 | 1.9 | 1.9 | MSA-SW43B-091522 | 1.9 | 0.41 |
| O-XYLENE | 2/112 | 2 | 0.49 J | 4.2 | MSA-SW43B-091522 | 2.345 | 0.25 |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| TOLUENE | 11/112 | 10 | 0.48 J | 12 | MSA-SW43B-091522 | 1.94 | 0.39 |
| TOTAL XYLENES | 8/112 | 7 | 0.43 J | 12 | MSA-SW43B-091522 | 2.12 | 0.35 |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- |
| **Tentatviely identified compounds (µg/L)** | | | | | | | |
| 1-HEXANOL, 2-ETHYL- | 1/1 | 100 | 2.1 NJ | 2.1 NJ | MSA-SW48A-031122 | 2.1 | 2.1 |

| Annual (2022) Dump Road Area (Martin State Airport) Groundwater Samples | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter | Frequency of Detection | | Minimum concentration (detects) | Maximum concentration (detects) | Sample with maximum detected concentration | Average of detected results | Average of all results |
| | Number | Percent | | | | | |
| **Volatile organic compounds (µg/L)** | | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3/84 | 4 | 4.1 | 10 J | MSA-MW-48D-052422 | 6.5 | 11.35 |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | 2/84 | 2 | 0.59 J | 1.3 | MSA-DMW-4I-051922 | 0.95 | 9.60 |
| 1,1-DICHLOROETHANE | 4/84 | 5 | 0.73 J | 6.1 | MSA-DMW-4I-051922 | 3.56 | 11.16 |
| 1,1-DICHLOROETHENE | 7/84 | 8 | 2.3 | 140 | MSA-DMW-11S-060922 | 29.87 | 13.59 |
| 1,2,3-TRIMETHYLBENZENE | 6/84 | 7 | 1 J | 15 J | MSA-DMW-09S-051722 | 5.3 | 7.54 |
| 1,2,4-TRICHLOROBENZENE | 2/84 | 2 | 2.4 | 57 | MSA-MW-52I-061622 | 29.7 | 18.42 |
| 1,2,4-TRIMETHYLBENZENE | 3/84 | 4 | 2.3 | 31 J | MSA-DMW-09S-051722 | 15.43 | 12.50 |
| 1,2-DICHLOROBENZENE | 3/84 | 4 | 2.1 | 3.5 | MSA-DMW-3S-051922 | 2.6 | 11.27 |
| 1,2-DICHLOROETHANE | 24/84 | 29 | 0.25 J | 61 J | MSA-MW-45S-060722 | 12.18 | 7.88 |
| 1,3-DICHLOROBENZENE | 1/84 | 1 | 5.5 | 5.5 | MSA-MW-48I-052422 | 5.5 | 10.60 |
| 1,4-DICHLOROBENZENE | 5/84 | 6 | 3.9 J | 35 | MSA-MW-48I-052422 | 18.78 | 10.54 |
| 2-BUTANONE | 2/84 | 2 | 1.2 J | 1.2 J | MSA-MW-52S-061622 | 1.2 | 27.62 |
| 2-BUTANONE | 2/84 | 2 | 1.2 J | 1.2 J | MSA-MW-42S-060222 | 1.2 | 27.62 |
| 4-ISOPROPYLTOLUENE | 1/84 | 1 | 0.57 J | 0.57 J | MSA-MW-42S-060222 | 0.57 | 13.02 |
| ACETONE | 2/84 | 2 | 5.4 J | 11 | MSA-MW-42S-060222 | 8.2 | 126.61 |
| BENZENE | 17/84 | 20 | 0.54 J | 97 | MSA-DMW-09S-051722 | 16.89 | 12.41 |
| CARBON TETRACHLORIDE | 6/84 | 7 | 2.5 | 7200 | MSA-MW-54I-060922 | 1382.42 | 101.61 |
| CHLOROBENZENE | 17/84 | 20 | 0.42 J | 580 | MSA-MW-41I-060222 | 67.01 | 21.88 |
| CHLOROFORM | 8/84 | 10 | 0.47 J | 1700 | MSA-MW-54I-060922 | 409.70 | 44.03 |
| CIS-1,2-DICHLOROETHENE | 64/84 | 76 | 0.5 J | 23000 | MSA-MW-54S-060922 | 1342.37 | 1022.94 |
| DIISOPROPYL ETHER | 3/84 | 4 | 0.39 J | 2.8 J | MSA-MW-16S-052522 | 1.43 | 4.01 |
| ETHYLBENZENE | 4/84 | 5 | 1.4 | 240 | MSA-DMW-09S-051722 | 73.73 | 13.21 |
| ISOPROPYLBENZENE | 2/84 | 2 | 0.54 J | 1.1 | MSA-MW-42S-060222 | 0.82 | 11.50 |
| M+P-XYLENES | 8/84 | 10 | 1.1 J | 2200 | MSA-DMW-09S-051722 | 380.44 | 45.72 |
| METHYLENE CHLORIDE | 2/84 | 2 | 3.1 J | 120 J | MSA-MW-41S-060222 | 61.55 | 61.31 |
| N-PROPYLBENZENE | 1/84 | 1 | 0.76 J | 0.76 J | MSA-MW-42S-060222 | 0.76 | 13.29 |
| NAPHTHALENE | 4/84 | 5 | 1.3 | 160 J | MSA-DMW-7S-052022 | 71.23 | 21.08 |
| O-XYLENE | 8/84 | 10 | 0.51 J | 240 | MSA-DMW-09S-051722 | 45.25 | 13.99 |
| SEC-BUTYLBENZENE | 3/84 | 4 | 0.53 J | 0.58 J | MSA-DMW-5S-051922 | 0.56 | 12.46 |
| TERTIARY-BUTYL ALCOHOL | 4/84 | 5 | 9.5 J | 96 | MSA-MW-52S-061622 | 37.125 | 169.05 |
| TETRACHLOROETHENE | 2/84 | 2 | 4.2 | 6.5 | MSA-DMW-4I-051922 | 5.35 | 10.41 |
| TOLUENE | 8/84 | 10 | 4.1 | 6900 | MSA-MW-54S-060922 | 1126.76 | 111.72 |
| TOTAL XYLENES | 10/84 | 12 | 1.1 J | 2400 | MSA-DMW-09S-051722 | 336.55 | 49.55 |
| TRANS-1,2-DICHLOROETHENE | 12/84 | 14 | 0.51 J | 220 J | MSA-DMW-3S-051922 | 29.69 | 15.89 |
| TRICHLOROETHENE | 56/84 | 67 | 0.61 J | 20000 | MSA-MW-54I-060922 | 1373.35 | 915.88 |
| VINYL CHLORIDE | 54/84 | 64 | 0.54 J | 6800 | MSA-DMW-11S-060922 | 599.56 | 388.43 |
| **Tentatviely identified compounds (µg/L)** | | | | | | | |
| | -- | -- | -- | -- | -- | -- | -- |

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration. This accounts for the possible presence of analytes in a sample below the quanitfication limit, and may artificially elevate the 'average for all samples' values.
µg/L - micrograms per liter
DRA - Dump Road Area
J - estimated value
MSA - Martin State Airport
MW- monitoring well
NJ - analyte tentatively identified at estimated concentration shown
U - analyte not detected; concentration shown is detection limit
UJ - analyte not detected; reported detection limit is approximate
UR - analyte not detected; result is unusable, certain criteria not met

**Table 4-2**
**2022 Surface Water Sampling Results for Trichloroethene, cis-1,2-Dichloroethene, and Vinyl Chloride**
**Frog Mortar Creek, Middle River Maryland**


| SAMPLE ID | LOCATION ID | SCREENING CRITERIA (µg/L) | Trichloroethene | *cis*- 1,2-Dichloroethene | Vinyl chloride |
|---|---|---|---|---|---|
| | | Freshwater Acute[(1)] | NA | NA | NA |
| | | Freshwater Chronic[(1)] | NA | NA | NA |
| | | Human Health Organism Only[(1)] | 300 [(3)] | NA | 24 [(3)] |
| | | BTAG Benchmark[(2)] | 21 | 590 | 930 |
| | | Swimming Level [4] | 10 | 300 | 0.7 |
| | | SAMPLE DATE | µg/L | µg/L | µg/L |
| MSA-SW37A-031122 | MSA-SW37A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37A-070622 | MSA-SW37A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37A-082222 | MSA-SW37A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37A-091522 | MSA-SW37A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37B-031122 | MSA-SW37B | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37B-070622 | MSA-SW37B | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37B-082222 | MSA-SW37B | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37B-091522 | MSA-SW37B | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37C-031122 | MSA-SW37C | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37C-070622 | MSA-SW37C | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37C-082222 | MSA-SW37C | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37C-091522 | MSA-SW37C | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37D-031122 | MSA-SW37D | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37D-070622 | MSA-SW37D | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37D-082222 | MSA-SW37D | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW37D-091522 | MSA-SW37D | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38A-031122 | MSA-SW38A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38A-070622 | MSA-SW38A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38A-082222 | MSA-SW38A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38A-091522 | MSA-SW38A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38B-031122 | MSA-SW38B | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38B-070622 | MSA-SW38B | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38B-082222 | MSA-SW38B | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38B-091522 | MSA-SW38B | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38C-031122 | MSA-SW38C | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38C-070622 | MSA-SW38C | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38C-082222 | MSA-SW38C | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38C-091522 | MSA-SW38C | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38D-031122 | MSA-SW38D | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38D-070622 | MSA-SW38D | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38D-082222 | MSA-SW38D | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW38D-091522 | MSA-SW38D | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |

**Table 4-2**
**2022 Surface Water Sampling Results for Trichloroethene, cis-1,2-Dichloroethene, and Vinyl Chloride**
**Frog Mortar Creek, Middle River Maryland**


| | | SCREENING CRITERIA (µg/L) | Trichloroethene | *cis*- 1,2-Dichloroethene | Vinyl chloride |
|---|---|---|---|---|---|
| | | Freshwater Acute[(1)] | NA | NA | NA |
| | | Freshwater Chronic[(1)] | NA | NA | NA |
| | | Human Health Organism Only[(1)] | 300 (3) | NA | 24 (3) |
| | | BTAG Benchmark[(2)] | 21 | 590 | 930 |
| | | Swimming Level [4] | 10 | 300 | 0.7 |
| SAMPLE ID | LOCATION ID | SAMPLE DATE | µg/L | µg/L | µg/L |
| MSA-SW40A-031122 | MSA-SW40A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40A-070622 | MSA-SW40A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40A-082222 | MSA-SW40A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40A-091522 | MSA-SW40A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40B-031122 | MSA-SW40B | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40B-070622 | MSA-SW40B | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40B-082222 | MSA-SW40B | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40B-091522 | MSA-SW40B | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40C-031122 | MSA-SW40C | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40C-070622 | MSA-SW40C | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40C-082222 | MSA-SW40C | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40C-091522 | MSA-SW40C | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40D-031122 | MSA-SW40D | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40D-070622 | MSA-SW40D | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40D-082222 | MSA-SW40D | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW40D-091522 | MSA-SW40D | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41A-031122 | MSA-SW41A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41A-070622 | MSA-SW41A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41A-082222 | MSA-SW41A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41A-091522 | MSA-SW41A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41B-031122 | MSA-SW41B | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41B-070622 | MSA-SW41B | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41B-082222 | MSA-SW41B | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41B-091522 | MSA-SW41B | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41C-031122 | MSA-SW41C | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41C-070622 | MSA-SW41C | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41C-082222 | MSA-SW41C | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41C-091522 | MSA-SW41C | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41D-031122 | MSA-SW41D | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41D-070622 | MSA-SW41D | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41D-082222 | MSA-SW41D | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW41D-091522 | MSA-SW41D | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |

**Table 4-2**
**2022 Surface Water Sampling Results for Trichloroethene, cis-1,2-Dichloroethene, and Vinyl Chloride**
**Frog Mortar Creek, Middle River Maryland**


| | | SCREENING CRITERIA (µg/L) | Trichloroethene | *cis*- 1,2-Dichloroethene | Vinyl chloride |
|---|---|---|---|---|---|
| | | Freshwater Acute[1] | NA | NA | NA |
| | | Freshwater Chronic[1] | NA | NA | NA |
| | | Human Health Organism Only[1] | 300 [3] | NA | 24 [3] |
| | | BTAG Benchmark[2] | 21 | 590 | 930 |
| | | Swimming Level [4] | 10 | 300 | 0.7 |
| SAMPLE ID | LOCATION ID | SAMPLE DATE | µg/L | µg/L | µg/L |
| MSA-SW42A-031122 | MSA-SW42A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42A-070622 | MSA-SW42A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42A-082222 | MSA-SW42A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42A-091522 | MSA-SW42A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42B-031122 | MSA-SW42B | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42B-070622 | MSA-SW42B | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42B-082222 | MSA-SW42B | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42B-091522 | MSA-SW42B | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42C-031122 | MSA-SW42C | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42C-070622 | MSA-SW42C | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42C-082222 | MSA-SW42C | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42C-091522 | MSA-SW42C | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42D-031122 | MSA-SW42D | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42D-070622 | MSA-SW42D | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42D-082222 | MSA-SW42D | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW42D-091522 | MSA-SW42D | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43A-031122 | MSA-SW43A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43A-070622 | MSA-SW43A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43A-082222 | MSA-SW43A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43A-091522 | MSA-SW43A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43B-031122 | MSA-SW43B | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43B-070622 | MSA-SW43B | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43B-082222 | MSA-SW43B | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43B-091522 | MSA-SW43B | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43C-031122 | MSA-SW43C | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43C-070622 | MSA-SW43C | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43C-082222 | MSA-SW43C | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43C-091522 | MSA-SW43C | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43D-031122 | MSA-SW43D | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43D-070622 | MSA-SW43D | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43D-082222 | MSA-SW43D | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW43D-091522 | MSA-SW43D | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |

**Table 4-2**
**2022 Surface Water Sampling Results for Trichloroethene, cis-1,2-Dichloroethene, and Vinyl Chloride**
**Frog Mortar Creek, Middle River Maryland**


| | | SCREENING CRITERIA (µg/L) | Trichloroethene | *cis*-1,2-Dichloroethene | Vinyl chloride |
|---|---|---|---|---|---|
| | | **Freshwater Acute[(1)]** | NA | NA | NA |
| | | **Freshwater Chronic[(1)]** | NA | NA | NA |
| | | **Human Health Organism Only[(1)]** | 300 [(3)] | NA | 24 [(3)] |
| | | **BTAG Benchmark[(2)]** | 21 | 590 | 930 |
| | | **Swimming Level [4]** | 10 | 300 | 0.7 |
| **SAMPLE ID** | **LOCATION ID** | **SAMPLE DATE** | **µg/L** | **µg/L** | **µg/L** |
| MSA-SW46A-031122 | MSA-SW46A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW46A-070622 | MSA-SW46A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW46A-082222 | MSA-SW46A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW46A-091522 | MSA-SW46A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW47A-031122 | MSA-SW47A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW47A-070622 | MSA-SW47A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW47A-082222 | MSA-SW47A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW47A-091522 | MSA-SW47A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW48A-031122 | MSA-SW48A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW48A-070622 | MSA-SW48A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW48A-082222 | MSA-SW48A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW48A-091522 | MSA-SW48A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW49A-031122 | MSA-SW49A | 03/11/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW49A-070622 | MSA-SW49A | 07/06/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW49A-082222 | MSA-SW49A | 08/22/2022 | 0.44 U | 0.46 U | 0.45 U |
| MSA-SW49A-091522 | MSA-SW49A | 09/15/2022 | 0.44 U | 0.46 U | 0.45 U |

1 National Recommended Water Quality Criteria, https://www.epa.gov/wqc/national-recommended-water-quality-criteria and Maryland Numerical Criteria for Toxic Substances in Surface Waters, COMAR 26.08.02.03, http://www.dsd.state.md.us./comar/comarhtml/26/26.08.02.03-2.htm

2 USEPA Region 3 Biological Technical Advisory Group Freshwater Screening Benchmarks (USEPA 2006).

3 For carcinogens, criterion is for incremental cancer risk of $1x10^{-5}$.

4 Site-specific swimming screening levels were developed in 2018 for trichloroethene, cis-1,2-dichloroethene, and vinyl chloride for Dark Head Cove and Cow Pen Creek, Middle River Complex. These risk-based screening values were approved by the Maryland Department of the Environment in 2019.

**Blue shading indicates the value exceeds at least one of the screening criteria.**

**Bold font indicates analyte was detected (positive result).**

BTAG- Biological Technical Assistance Group

COMAR- Code of Maryland Regulations

NA - not available

SW - surface water

µg/L - micrograms per liter

U - not detected at method detection limit

USEPA - United States Environmental Protection Agency

# APPENDICES

**Appendix A—Surface-Water Sample Log Sheets and Baltimore Precipitation**

**Appendix B—Data-Validation Reports, Chains of Custody, and Laboratory Analytical Reports**

**Appendix C—Chemical-Results Data Tables**

**Appendix D—Time-Series Plots of Major Volatile Organic Compounds**

# APPENDIX A—SURFACE-WATER SAMPLE LOG SHEETS

## Water Quality Field Parameters-March 2022
## Frog Mortar Creek
## Lockheed Martin, Martin State Airport, Middle River Maryland

| Sample ID | | Date | Time | pH | Specific conductance (S.C.) | Temperature (Temp.) | Turbidity | Dissolved oxygen (DO) | Salinity | Oxidation-reduction potential (ORP) | Water Depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Date ID | mo/day/year | 24-hour units | Standard unit (S.U.) | MilliSiemens per centimeter (mS/cm) | Degrees Celsius ($^{o}$C) | Nephelometric turbidity unit (NTU) | Milligrams per liter (mg/L) | Parts per thousand (ppt) | MilliVolts (mV) | Feet |
| MSA-SW37A | -031122 | 3/11/2022 | 1021 | 7.77 | 3.85 | 10.69 | 10.90 | 6.39 | 2.00 | 216 | 1.20 |
| MSA-SW37B | -031122 | 3/11/2022 | 1014 | 7.76 | 3.87 | 10.76 | 9.32 | 6.44 | 2.02 | 215 | 3.60 |
| MSA-SW37C | -031122 | 3/11/2022 | 1028 | 7.79 | 3.91 | 10.83 | 9.21 | 6.42 | 2.04 | 215 | 5.00 |
| MSA-SW37D | -031122 | 3/11/2022 | 1034 | 7.83 | 3.91 | 10.81 | 8.23 | 6.43 | 2.04 | 215 | >6 |
| MSA-SW38A | -031122 | 3/11/2022 | 0915 | 7.62 | 3.87 | 10.44 | 11.05 | 6.33 | 2.02 | 220 | 1.60 |
| MSA-SW38B | -031122 | 3/11/2022 | 0922 | 7.63 | 3.88 | 10.28 | 10.48 | 6.44 | 2.02 | 220 | 4.60 |
| MSA-SW38C | -031122 | 3/11/2022 | 0927 | 7.65 | 3.88 | 10.30 | 10.33 | 6.55 | 2.02 | 220 | 4.90 |
| MSA-SW38D | -031122 | 3/11/2022 | 0933 | 7.68 | 3.88 | 10.34 | 9.40 | 6.72 | 2.03 | 219 | 5.10 |
| MSA-SW40A | -031122 | 3/11/2022 | 0939 | 7.72 | 3.88 | 10.31 | 10.92 | 6.58 | 2.02 | 218 | 1.70 |
| MSA-SW40B | -031122 | 3/11/2022 | 0943 | 7.73 | 3.88 | 10.43 | 9.72 | 6.58 | 2.02 | 218 | 3.80 |
| MSA-SW40C | -031122 | 3/11/2022 | 0947 | 7.75 | 3.89 | 10.53 | 9.92 | 6.55 | 2.03 | 217 | 3.60 |
| MSA-SW40D | -031122 | 3/11/2022 | 0951 | 7.76 | 3.88 | 10.43 | 9.49 | 6.53 | 2.03 | 217 | 5.10 |
| MSA-SW41A | -031122 | 3/11/2022 | 0846 | 7.43 | 3.88 | 10.17 | 8.79 | 6.37 | 2.02 | 226 | 2.30 |
| MSA-SW41B | -031122 | 3/11/2022 | 0848 | 7.46 | 3.87 | 10.25 | 10.38 | 6.51 | 2.02 | 225 | 3.60 |
| MSA-SW41C | -031122 | 3/11/2022 | 0854 | 7.49 | 3.90 | 10.08 | 9.29 | 6.44 | 2.03 | 223 | 4.70 |
| MSA-SW41D | -031122 | 3/11/2022 | 0859 | 7.60 | 3.90 | 10.19 | 8.69 | 6.90 | 2.03 | 222 | >6 |
| MSA-SW42A | -031122 | 3/11/2022 | 1001 | 7.77 | 3.87 | 10.54 | 11.71 | 6.38 | 2.02 | 216 | 1.20 |
| MSA-SW42B | -031122 | 3/11/2022 | 1006 | 7.76 | 3.89 | 10.46 | 9.07 | 6.72 | 2.03 | 217 | 4.00 |
| MSA-SW42C | -031122 | 3/11/2022 | 1009 | 7.76 | 3.89 | 10.52 | 10.48 | 6.51 | 2.03 | 217 | 5.10 |
| MSA-SW42D | -031122 | 3/11/2022 | 1014 | 7.77 | 3.89 | 10.56 | 10.13 | 6.51 | 2.03 | 217 | >6 |
| MSA-SW43A | -031122 | 3/11/2022 | 0818 | 6.03 | 3.79 | 10.30 | 11.30 | 6.92 | 1.97 | 256 | 2.00 |
| MSA-SW43B | -031122 | 3/11/2022 | 0824 | 6.40 | 3.89 | 9.89 | 11.06 | 7.08 | 2.03 | 245 | 3.10 |
| MSA-SW43C | -031122 | 3/11/2022 | 0827 | 6.75 | 3.91 | 10.04 | 8.89 | 6.97 | 2.04 | 242 | 5.20 |
| MSA-SW43D | -031122 | 3/11/2022 | 0832 | 6.97 | 3.91 | 10.09 | 7.98 | 6.66 | 2.04 | 237 | 5.40 |
| MSA-SW46A | -031122 | 3/11/2022 | 0957 | 7.78 | 3.88 | 10.30 | 9.87 | 6.45 | 2.02 | 217 | 1.70 |
| MSA-SW47A | -031122 | 3/11/2022 | 0933 | 7.69 | 3.88 | 10.45 | 9.53 | 6.72 | 2.02 | 220 | 3.00 |
| MSA-SW48A | -031122 | 3/11/2022 | 0905 | 7.62 | 3.87 | 10.24 | 9.81 | 6.45 | 2.02 | 221 | 2.20 |
| MSA-SW49A | -031122 | 3/11/2022 | 0838 | 7.29 | 3.89 | 9.89 | 10.48 | 6.42 | 2.02 | 230 | 1.50 |

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37A -031122
Sample Location: MSA-SW37A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1021 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.77** | **3.85** | **10.69** | **10.9** | **6.39** | **2** | **216** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37B -031122
Sample Location: MSA-SW37B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1014 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.76** | **3.87** | **10.76** | **9.32** | **6.44** | **2.02** | **215** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37C -031122
Sample Location: MSA-SW37C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1028 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.79** | **3.91** | **10.83** | **9.21** | **6.42** | **2.04** | **215** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37D -031122
Sample Location: MSA-SW37D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1034 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.83** | **3.91** | **10.81** | **8.23** | **6.43** | **2.04** | **215** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38A -031122
Sample Location: MSA-SW38A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0915 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.62** | **3.87** | **10.44** | **11.05** | **6.33** | **2.02** | **220** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38B -031122
Sample Location: MSA-SW38B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0922 | **clear** | **7.63** | **3.88** | **10.28** | **10.48** | **6.44** | **2.02** | **220** |
| Depth: | 1 ft below water | | | | | | | | |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38C -031122
Sample Location: MSA-SW38C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0927 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.65** | **3.88** | **10.30** | **10.33** | **6.55** | **2.02** | **220** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.9 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38D -031122
Sample Location: MSA-SW38D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0933 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.68** | **3.88** | **10.34** | **9.40** | **6.72** | **2.03** | **219** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40A -031122
Sample Location: MSA-SW40A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0939 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.72** | **3.88** | **10.31** | **10.92** | **6.58** | **2.0** | **218** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.7 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40B -031122
Sample Location: MSA-SW40B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0943 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.73** | **3.88** | **10.43** | **9.72** | **6.58** | **2.0** | **218** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.8 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40C -031122
Sample Location: MSA-SW40C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0947 | **clear** | **7.75** | **3.89** | **10.53** | **9.92** | **6.55** | **2.0** | **217** |
| Depth: | 1 ft below water | | | | | | | | |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40D -031122
Sample Location: MSA-SW40D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0951 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.76** | **3.88** | **10.43** | **9.49** | **6.53** | **2.0** | **217** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41A -031122
Sample Location: MSA-SW41A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0846 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.43** | **3.88** | **10.17** | **8.79** | **6.37** | **2.0** | **226** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2.3 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41B -031122
Sample Location: MSA-SW41B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0848 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.46** | **3.87** | **10.25** | **10.38** | **6.51** | **2.0** | **225** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41C -031122
Sample Location: MSA-SW41C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0854 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.49** | **3.90** | **10.08** | **9.29** | **6.44** | **2.0** | **223** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.7 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41D -031122
Sample Location: MSA-SW41D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0859 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.60** | **3.90** | **10.19** | **8.69** | **6.90** | **2.0** | **222** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42A -031122
Sample Location: MSA-SW42A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1001 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.77** | **3.87** | **10.54** | **11.71** | **6.38** | **2.0** | **216** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42B -031122
Sample Location: MSA-SW42B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1006 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.76** | **3.89** | **10.46** | **9.07** | **6.72** | **2.0** | **217** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42C -031122
Sample Location: MSA-SW42C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1009 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.76** | **3.89** | **10.52** | **10.48** | **6.51** | **2.0** | **217** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42D -031122
Sample Location: MSA-SW42D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 1014 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.77** | **3.89** | **10.56** | **10.13** | **6.51** | **2.0** | **217** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43A -031122
Sample Location: MSA-SW43A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0818 | **clear** | **6.03** | **3.79** | **10.30** | **11.30** | **6.92** | **2.0** | **256** |
| Depth: | 1 ft below water | | | | | | | | |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43B -031122
Sample Location: MSA-SW43B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0824 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **6.40** | **3.89** | **9.89** | **11.06** | **7.08** | **2.0** | **245** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43C -031122
Sample Location: MSA-SW43C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0827 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **6.75** | **3.91** | **10.04** | **8.89** | **6.97** | **2.0** | **242** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43D -031122
Sample Location: MSA-SW43D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0832 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **6.97** | **3.91** | **10.09** | **7.98** | **6.66** | **2.0** | **237** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.4 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW46A -031122
Sample Location: MSA-SW46A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0957 | **clear** | **7.78** | **3.88** | **10.30** | **9.87** | **6.45** | **2.0** | **217** |
| Depth: | 1 ft below water | | | | | | | | |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.7 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW47A -031122
Sample Location: MSA-SW47A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0933 | **clear** | **7.69** | **3.88** | **10.45** | **9.53** | **6.72** | **2.0** | **220** |
| Depth: | 1 ft below water | | | | | | | | |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW48A -031122
Sample Location: MSA-SW48A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0905 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.62** | **3.87** | **10.24** | **9.81** | **6.45** | **2.0** | **221** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW49A -031122
Sample Location: MSA-SW49A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 3/11/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0838 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.29** | **3.89** | **9.89** | **10.48** | **6.42** | **2.0** | **230** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

## Water Quality Field Parameters-July 2022
## Frog Mortar Creek
## Lockheed Martin, Martin State Airport, Middle River Maryland

| Sample ID | | Date | Time | pH | Specific conductance (S.C.) | Temperature (Temp.) | Turbidity | Dissolved oxygen (DO) | Salinity | Oxidation-reduction potential (ORP) | Water Depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Date ID | mo/day/year | 24-hour units | Standard unit (S.U.) | MilliSiemens per centimeter (mS/cm) | Degrees Celsius ($^{o}$C) | Nephelometric turbidity unit (NTU) | Milligrams per liter (mg/L) | Parts per thousand (ppt) | MilliVolts (mV) | Feet |
| MSA-SW37A | -070622 | 7/6/2022 | 0932 | 7.34 | 4.26 | 28.44 | 9.76 | 5.48 | 0.23 | 170 | 1.50 |
| MSA-SW37B | -070622 | 7/6/2022 | 0935 | 7.34 | 4.29 | 28.52 | 10.40 | 5.64 | 0.23 | 180 | 3.00 |
| MSA-SW37C | -070622 | 7/6/2022 | 0938 | 7.36 | 4.36 | 28.52 | 10.30 | 6.06 | 0.23 | 186 | 4.80 |
| MSA-SW37D | -070622 | 7/6/2022 | 0941 | 7.39 | 4.36 | 28.50 | 10.10 | 6.29 | 0.23 | 188 | >5.5 |
| MSA-SW38A | -070622 | 7/6/2022 | 0841 | 7.25 | 4.46 | 27.99 | 9.77 | 5.33 | 0.24 | 192 | 1.50 |
| MSA-SW38B | -070622 | 7/6/2022 | 0844 | 7.26 | 4.46 | 27.98 | 9.96 | 5.07 | 0.24 | 192 | 4.10 |
| MSA-SW38C | -070622 | 7/6/2022 | 0846 | 7.26 | 4.53 | 27.99 | 11.60 | 5.51 | 0.24 | 194 | 4.60 |
| MSA-SW38D | -070622 | 7/6/2022 | 0850 | 7.31 | 4.52 | 27.98 | 10.80 | 5.65 | 0.24 | 197 | 5.20 |
| MSA-SW40A | -070622 | 7/6/2022 | 0900 | 7.28 | 4.37 | 27.85 | 9.46 | 5.01 | 0.23 | 186 | 1.60 |
| MSA-SW40B | -070622 | 7/6/2022 | 0903 | 7.30 | 4.32 | 27.94 | 14.70 | 5.40 | 0.23 | 190 | 2.50 |
| MSA-SW40C | -070622 | 7/6/2022 | 0905 | 7.32 | 4.38 | 28.06 | 8.07 | 5.91 | 0.23 | 193 | 4.70 |
| MSA-SW40D | -070622 | 7/6/2022 | 0908 | 7.33 | 4.50 | 28.19 | 8.43 | 5.95 | 0.23 | 195 | >5.5 |
| MSA-SW41A | -070622 | 7/6/2022 | 0822 | 7.23 | 4.43 | 27.89 | 9.30 | 5.08 | 0.24 | 187 | 1.80 |
| MSA-SW41B | -070622 | 7/6/2022 | 0825 | 7.23 | 4.45 | 27.89 | 9.69 | 5.08 | 0.24 | 190 | 3.50 |
| MSA-SW41C | -070622 | 7/6/2022 | 0828 | 7.24 | 4.50 | 28.00 | 11.70 | 5.24 | 0.24 | 193 | 5.10 |
| MSA-SW41D | -070622 | 7/6/2022 | 0832 | 7.28 | 4.54 | 28.05 | 11.00 | 6.01 | 0.24 | 195 | >5.5 |
| MSA-SW42A | -070622 | 7/6/2022 | 0916 | 7.34 | 4.21 | 28.12 | 20.80 | 5.82 | 0.22 | 185 | 1.80 |
| MSA-SW42B | -070622 | 7/6/2022 | 0919 | 7.33 | 4.22 | 28.16 | 13.60 | 5.80 | 0.22 | 189 | 3.10 |
| MSA-SW42C | -070622 | 7/6/2022 | 0922 | 7.32 | 4.29 | 28.12 | 10.90 | 5.71 | 0.23 | 191 | 5.20 |
| MSA-SW42D | -070622 | 7/6/2022 | 0926 | 7.34 | 4.31 | 28.16 | 10.80 | 6.05 | 0.23 | 191 | >5.5 |
| MSA-SW43A | -070622 | 7/6/2022 | 0800 | 7.30 | 4.55 | 27.48 | 34.20 | 5.41 | 0.24 | 165 | 2.00 |
| MSA-SW43B | -070622 | 7/6/2022 | 0805 | 7.23 | 4.51 | 27.89 | 11.30 | 5.44 | 0.24 | 179 | 3.80 |
| MSA-SW43C | -070622 | 7/6/2022 | 0808 | 7.23 | 4.52 | 27.98 | 11.70 | 5.23 | 0.24 | 183 | 4.80 |
| MSA-SW43D | -070622 | 7/6/2022 | 0811 | 7.23 | 4.56 | 28.06 | 11.70 | 5.23 | 0.24 | 187 | 5.30 |
| MSA-SW46A | -070622 | 7/6/2022 | 0912 | 7.37 | 4.24 | 28.06 | 12.90 | 5.51 | 0.22 | 192 | 2.10 |
| MSA-SW47A | -070622 | 7/6/2022 | 0854 | 7.33 | 4.42 | 27.99 | 9.46 | 5.14 | 0.23 | 195 | 2.60 |
| MSA-SW48A | -070622 | 7/6/2022 | 0836 | 7.28 | 4.45 | 27.91 | 10.30 | 4.86 | 0.24 | 194 | 1.70 |
| MSA-SW49A | -070622 | 7/6/2022 | 0816 | 7.24 | 4.46 | 27.88 | 10.00 | 4.99 | 0.24 | 184 | 2.20 |

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37A -070622
Sample Location: MSA-SW37A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0932 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.34** | **4.26** | **28.44** | **9.76** | **5.48** | **0.23** | **170** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37B -070622
Sample Location: MSA-SW37B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0935 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.34** | **4.29** | **28.52** | **10.4** | **5.64** | **0.23** | **180** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37C -070622
Sample Location: MSA-SW37C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0938 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.36** | **4.36** | **28.52** | **10.3** | **6.06** | **0.23** | **186** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.8 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW37D -070622
Sample Location: MSA-SW37D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0941 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.39** | **4.36** | **28.5** | **10.1** | **6.29** | **0.23** | **188** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >5.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38A -070622
Sample Location: MSA-SW38A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | | | | | | | | |
| Time: | #REF! | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Depth: | 1 ft below water | **clear** | **#REF!** | **#REF!** | **#REF!** | **#REF!** | **#REF!** | **0.24** | **192** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38B -070622
Sample Location: MSA-SW38B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0841 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.25** | **27.99** | **#REF!** | **9.77** | **5.33** | **0.24** | **192** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38C -070622
Sample Location: MSA-SW38C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0844 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.26** | **27.98** | **#REF!** | **9.96** | **5.07** | **0.24** | **194** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW38D -070622
Sample Location: MSA-SW38D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0846 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.26** | **27.99** | **#REF!** | **11.60** | **5.51** | **0.24** | **197** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40A -070622
Sample Location: MSA-SW40A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0850 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.31** | **27.98** | **#REF!** | **10.80** | **5.65** | **0.2** | **186** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40B -070622
Sample Location: MSA-SW40B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0903 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.30** | **4.32** | **27.94** | **14.70** | **5.40** | **0.2** | **190** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40C -070622
Sample Location: MSA-SW40C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0905 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.32** | **4.38** | **28.06** | **8.07** | **5.91** | **0.2** | **193** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.7 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW40D -070622
Sample Location: MSA-SW40D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0908 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.33** | **4.50** | **28.19** | **8.43** | **5.95** | **0.2** | **195** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >5.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41A -070622
Sample Location: MSA-SW41A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0822 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.23** | **4.43** | **27.89** | **9.30** | **5.08** | **0.2** | **187** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.8 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41B -070622
Sample Location: MSA-SW41B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0825 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.23** | **4.45** | **27.89** | **9.69** | **5.08** | **0.2** | **190** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41C -070622
Sample Location: MSA-SW41C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0828 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.24** | **4.50** | **28.00** | **11.70** | **5.24** | **0.2** | **193** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW41D -070622
Sample Location: MSA-SW41D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0832 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.28** | **4.54** | **28.05** | **11.00** | **6.01** | **0.2** | **195** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >5.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42A -070622
Sample Location: MSA-SW42A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0916 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.34** | **4.21** | **28.12** | **20.80** | **5.82** | **0.2** | **185** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.8 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42B -070622
Sample Location: MSA-SW42B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0919 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.33** | **4.22** | **28.16** | **13.60** | **5.80** | **0.2** | **189** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42C -070622
Sample Location: MSA-SW42C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0922 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.32** | **4.29** | **28.12** | **10.90** | **5.71** | **0.2** | **191** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 5.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW42D -070622
Sample Location: MSA-SW42D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0926 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.34** | **4.31** | **28.16** | **10.80** | **6.05** | **0.2** | **191** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth >5.5 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43A -070622
Sample Location: MSA-SW43A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0800 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.30** | **4.55** | **27.48** | **34.20** | **5.41** | **0.2** | **165** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43B -070622
Sample Location: MSA-SW43B
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0805 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.23** | **4.51** | **27.89** | **11.30** | **5.44** | **0.2** | **179** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 3.8 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43C -070622
Sample Location: MSA-SW43C
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0808 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.23** | **4.52** | **27.98** | **11.70** | **5.23** | **0.2** | **183** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 4.8 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW43D -070622
Sample Location: MSA-SW43D
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0811 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.23** | **4.56** | **28.06** | **11.70** | **5.23** | **0.2** | **187** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs + TICs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

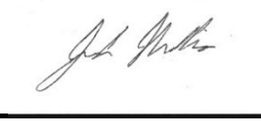
Water depth 5.3 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):



Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW46A -070622
Sample Location: MSA-SW46A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0912 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.37** | **4.24** | **28.06** | **12.90** | **5.51** | **0.2** | **192** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2.1 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

## Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW47A -070622
Sample Location: MSA-SW47A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0854 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.33** | **4.42** | **27.99** | **9.46** | **5.14** | **0.2** | **195** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2.6 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW48A -070622
Sample Location: MSA-SW48A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0836 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.28** | **4.45** | **27.91** | **10.30** | **4.86** | **0.2** | **194** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 1.7 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

Tetra Tech

# SURFACE WATER SAMPLE LOG SHEET



Project Site Name: Frog Mortar Creek, Martin State Airport
Project No.: 112IC09567

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Tidal creek - freshwater
[] QA Sample Type:

Sample ID No.: MSA-SW49A -070622
Sample Location: MSA-SW49A
Sampled By: J. Mullis
C.O.C. No.:

Type of Sample:
[x] Low Concentration
[] High Concentration

## SAMPLING DATA:

| | | Color | pH | S.C. | Temp. | Turbidity | DO | Salinity | ORP |
|---|---|---|---|---|---|---|---|---|---|
| Date: | 7/6/2022 | (Visual) | (S.U.) | (mS/cm) | ($^0$C) | (NTU) | (mg/L) | (ppt) | mV |
| Time: | 0816 | | | | | | | | |
| Depth: | 1 ft below water | **clear** | **7.24** | **4.46** | **27.88** | **10.00** | **4.99** | **0.2** | **184** |
| Method: | Grab | | | | | | | | |

## SAMPLE COLLECTION INFORMATION:

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOCs | HCL pH<2 | 3 - 40 mL glass vials | Yes |
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## OBSERVATIONS / NOTES:

Water depth 2.2 Feet

## MAP:


## Circle if Applicable:

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

Signature(s):

**Water Quality Field Parameters-August 2022**
**Frog Mortar Creek**
**Lockheed Martin, Martin State Airport, Middle River, Maryland**

| Sample ID | | Date | Time | pH | Specific conductance | Temperature | Turbidity | Dissolved oxygen | Salinity | Oxidation-reduction potential | Water depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Date ID | (month/day/year) | (24-hour) | (standard units) | (milliSiemens per centimeter) | degrees Celsius | (nephelometric turbidity units) | (milligrams per liter) | (parts per thousand) | (milllivolts) | (feet) |
| MSA-SW37A | -082222 | 08/22/2022 | 1240 | 7.71 | 7.26 | 29.71 | 9.62 | 4.99 | 4 | 162 | 1.8 |
| MSA-SW37B | -082222 | 08/22/2022 | 1242 | 7.74 | 7.26 | 29.74 | 11.5 | 5.04 | 4 | 173 | 3.8 |
| MSA-SW37C | -082222 | 08/22/2022 | 1244 | 7.82 | 7.27 | 29.82 | 9.84 | 5.22 | 4 | 176 | 5.5 |
| MSA-SW37D | -082222 | 08/22/2022 | 1247 | 7.78 | 7.28 | 29.87 | 7.67 | 5.06 | 4 | 180 | >6 |
| MSA-SW38A | -082222 | 08/22/2022 | 1153 | 7.66 | 7.33 | 29.34 | 7.84 | 4.86 | 4 | 192 | 2.1 |
| MSA-SW38B | -082222 | 08/22/2022 | 1155 | 7.66 | 7.32 | 29.36 | 8.44 | 4.79 | 4 | 193 | 4.9 |
| MSA-SW38C | -082222 | 08/22/2022 | 1158 | 7.65 | 7.33 | 29.35 | 8.91 | 4.22 | 4 | 193 | 5.2 |
| MSA-SW38D | -082222 | 08/22/2022 | 1200 | 7.65 | 7.34 | 29.32 | 9.12 | 4.84 | 4 | 190 | >6 |
| MSA-SW40A | -082222 | 08/22/2022 | 1211 | 7.83 | 7.26 | 29.42 | 6.94 | 5.3 | 4 | 177 | 2 |
| MSA-SW40B | -082222 | 08/22/2022 | 1214 | 7.62 | 7.24 | 29.39 | 10.6 | 4.78 | 4 | 186 | 3.1 |
| MSA-SW40C | -082222 | 08/22/2022 | 1217 | 7.6 | 7.25 | 29.39 | 9.9 | 4.69 | 4 | 185 | 4.4 |
| MSA-SW40D | -082222 | 08/22/2022 | 1220 | 7.65 | 7.32 | 29.46 | 8.8 | 4.86 | 4 | 182 | >6 |
| MSA-SW41A | -082222 | 08/22/2022 | 1134 | 7.62 | 7.33 | 29.35 | 8.21 | 4.94 | 4 | 189 | 2.7 |
| MSA-SW41B | -082222 | 08/22/2022 | 1138 | 7.66 | 7.33 | 29.34 | 8.27 | 4.96 | 4 | 192 | 4 |
| MSA-SW41C | -082222 | 08/22/2022 | 1140 | 7.66 | 7.34 | 29.32 | 9.19 | 4.97 | 4 | 194 | 5.7 |
| MSA-SW41D | -082222 | 08/22/2022 | 1143 | 7.64 | 7.36 | 29.3 | 9.1 | 4.85 | 4 | 196 | >6 |
| MSA-SW42A | -082222 | 08/22/2022 | 1226 | 7.62 | 7.24 | 29.57 | 9.41 | 4.85 | 4 | 178 | 2.4 |
| MSA-SW42B | -082222 | 08/22/2022 | 1228 | 7.67 | 7.27 | 29.67 | 10.7 | 4.79 | 4 | 178 | 4.4 |
| MSA-SW42C | -082222 | 08/22/2022 | 1231 | 7.72 | 7.28 | 29.66 | 8.68 | 4.84 | 4 | 182 | 5.7 |
| MSA-SW42D | -082222 | 08/22/2022 | 1235 | 7.74 | 7.28 | 29.7 | 8.97 | 5.12 | 4 | 177 | >6 |
| MSA-SW43A | -082222 | 08/22/2022 | 1112 | 7.54 | 7.4 | 29.01 | 10.6 | 5.14 | 4.1 | 166 | 2.2 |
| MSA-SW43B | -082222 | 08/22/2022 | 1117 | 7.61 | 7.38 | 29.32 | 7.46 | 4.8 | 4.1 | 178 | 3.2 |
| MSA-SW43C | -082222 | 08/22/2022 | 1119 | 7.6 | 7.37 | 29.34 | 6.42 | 4.88 | 4.1 | 188 | 5.2 |
| MSA-SW43D | -082222 | 08/22/2022 | 1125 | 7.6 | 7.4 | 29.27 | 8.12 | 4.85 | 4.1 | 189 | >6 |
| MSA-SW46A | -082222 | 08/22/2022 | 1222 | 7.59 | 7.25 | 29.47 | 9.91 | 4.59 | 4 | 174 | 2.6 |
| MSA-SW47A | -082222 | 08/22/2022 | 1205 | 7.64 | 7.33 | 29.32 | 7.13 | 4.76 | 4 | 180 | 2.2 |
| MSA-SW48A | -082222 | 08/22/2022 | 1148 | 7.65 | 7.32 | 29.33 | 8.33 | 4.81 | 4 | 194 | 1.9 |
| MSA-SW49A | -082222 | 08/22/2022 | 1130 | 7.6 | 7.39 | 29.27 | 7.75 | 4.69 | 4.1 | 186 | 2.9 |

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW37A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1240 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.71 | 7.26 | 29.71 | 9.62 | 4.99 | 4 | 162 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 1.8 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37B - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW37B | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1242 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.74 | 7.26 | 29.74 | 11.5 | 5.04 | 4 | 173 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.8 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37C - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW37C | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1244 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X ] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.82 | 7.27 | 29.82 | 9.84 | 5.22 | 4 | 176 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.5 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37D - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW37D | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1247 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.78 | 7.28 | 29.87 | 7.67 | 5.06 | 4 | 180 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW38A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1153 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.66 | 7.33 | 29.34 | 7.84 | 4.86 | 4 | 192 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.1 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38B - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW38B | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1155 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.66 | 7.32 | 29.36 | 8.44 | 4.79 | 4 | 193 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.9 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38C - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW38C | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1158 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X ] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.65 | 7.33 | 29.35 | 8.91 | 4.22 | 4 | 193 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38D - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW38D | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1200 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.65 | 7.34 | 29.32 | 9.12 | 4.84 | 4 | 190 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW40A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1211 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.83 | 7.26 | 29.42 | 6.94 | 5.3 | 4 | 177 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40B - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW40B | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1214 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.62 | 7.24 | 29.39 | 10.6 | 4.78 | 4 | 186 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.1 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40C - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW40C | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1217 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.6 | 7.25 | 29.39 | 9.9 | 4.69 | 4 | 185 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40D - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-40D | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1220 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.65 | 7.32 | 29.46 | 8.8 | 4.86 | 4 | 182 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW41A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1134 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.62 | 7.33 | 29.35 | 8.21 | 4.94 | 4 | 189 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.7 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41B - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW41B | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1138 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.66 | 7.33 | 29.34 | 8.27 | 4.96 | 4 | 192 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41C - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW41C | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1140 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.66 | 7.34 | 29.32 | 9.19 | 4.97 | 4 | 194 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.7 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41D - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW41D | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1143 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.64 | 7.36 | 29.3 | 9.1 | 4.85 | 4 | 196 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW42A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1226 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.62 | 7.24 | 29.57 | 9.41 | 4.85 | 4 | 178 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42B - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW42B | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1228 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.67 | 7.27 | 29.67 | 10.7 | 4.79 | 4 | 178 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42C - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW42C | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1231 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X ] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.72 | 7.28 | 29.66 | 8.68 | 4.84 | 4 | 182 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.7 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42D - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-42D | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1235 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X ] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.74 | 7.28 | 29.7 | 8.97 | 5.12 | 4 | 177 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW43A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1112 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.54 | 7.4 | 29.01 | 10.6 | 5.14 | 4.1 | 166 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43B - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW43B | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1117 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.61 | 7.38 | 29.32 | 7.46 | 4.8 | 4.1 | 178 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43C - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW43C | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1119 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.6 | 7.37 | 29.34 | 6.42 | 4.88 | 4.1 | 188 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43D - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-43D | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1125 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X ] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.6 | 7.4 | 29.27 | 8.12 | 4.85 | 4.1 | 189 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW46A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW46A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1222 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.59 | 7.25 | 29.47 | 9.91 | 4.59 | 4 | 174 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** August 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW47A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW47A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1205 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.64 | 7.33 | 29.32 | 7.13 | 4.76 | 4 | 180 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW48A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW48A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1148 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.65 | 7.32 | 29.33 | 8.33 | 4.81 | 4 | 194 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 1.9 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | August 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW49A - 082222 | **Sampled By:** | Mullis |
| **Sample Location:** | MSA-SW49A | **Sample Date:** | 22 August, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 1130 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.6 | 7.39 | 29.29 | 7.75 | 4.69 | 4.1 | 186 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.9 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

**Water Quality Parameters-September 2022**
**(measured during sampling)**
**Frog Mortar Creek**
**Lockheed Martin, Martin State Airport, Middle River, Maryland**

| Sample ID | | Sampling date | Time | pH | Specific conductance | Temperature | Turbidity | Dissolved oxygen | Salinity | Oxidation-reduction potential | Water depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Date ID | (month/day/year) | (24-hour) | (standard units) | (milliSiemens per centimeter) | (degrees Celsius) | (nephelometric turbidity units) | (milligrams per liter) | (parts per thousand) | (milllivolts) | (feet) |
| MSA-SW37A | -091522 | 09/15/2022 | 0911 | 7.25 | 9.55 | 25 | 20 | 5.32 | 5.4 | 123 | 3 |
| MSA-SW37B | -091522 | 09/15/2022 | 0914 | 7.25 | 9.58 | 24.95 | 20.2 | 4.89 | 5.4 | 172 | 4.4 |
| MSA-SW37C | -091522 | 09/15/2022 | 0916 | 7.25 | 9.53 | 24.85 | 16.9 | 5.01 | 5.3 | 172 | 5.5 |
| MSA-SW37D | -091522 | 09/15/2022 | 0919 | 7.26 | 9.55 | 24.94 | 14.8 | 5.31 | 5.4 | 172 | >6 |
| MSA-SW38A | -091522 | 09/15/2022 | 0831 | 7.16 | 9.53 | 24.78 | 24.44 | 4.94 | 5.3 | 101 | 3.4 |
| MSA-SW38B | -091522 | 09/15/2022 | 0833 | 7.16 | 9.58 | 24.82 | 24.4 | 4.98 | 5.4 | 189 | 4.4 |
| MSA-SW38C | -091522 | 09/15/2022 | 0836 | 7.17 | 9.6 | 24.85 | 22 | 5.2 | 5.2 | 188 | 4.7 |
| MSA-SW38D | -091522 | 09/15/2022 | 0838 | 7.17 | 9.6 | 24.84 | 21.4 | 4.97 | 5.4 | 187 | >6 |
| MSA-SW40A | -091522 | 09/15/2022 | 0845 | 7.17 | 9.61 | 24.82 | 23.6 | 5.07 | 5.4 | 183 | 2.6 |
| MSA-SW40B | -091522 | 09/15/2022 | 0847 | 7.18 | 9.63 | 24.94 | 16.4 | 5.15 | 5.4 | 181 | 3.3 |
| MSA-SW40C | -091522 | 09/15/2022 | 0849 | 7.21 | 9.65 | 24.96 | 16 | 5.32 | 5.4 | 180 | 5.2 |
| MSA-SW40D | -091522 | 09/15/2022 | 0852 | 7.22 | 9.62 | 24.9 | 14.4 | 5.38 | 5.4 | 180 | >6 |
| MSA-SW41A | -091522 | 09/15/2022 | 0817 | 7.03 | 9.64 | 24.67 | 16.6 | 5.03 | 5.4 | 208 | 2.5 |
| MSA-SW41B | -091522 | 09/15/2022 | 0819 | 7.07 | 9.65 | 24.81 | 15.2 | 5.28 | 5.4 | 204 | 3.1 |
| MSA-SW41C | -091522 | 09/15/2022 | 0822 | 7.09 | 9.67 | 24.85 | 18.7 | 4.88 | 5.4 | 201 | 4.6 |
| MSA-SW41D | -091522 | 09/15/2022 | 0824 | 7.11 | 9.69 | 24.94 | 19.1 | 5.25 | 5.4 | 199 | >6 |
| MSA-SW42A | -091522 | 09/15/2022 | 0859 | 7.23 | 9.58 | 24.77 | 16.4 | 4.99 | 5.4 | 177 | 2.8 |
| MSA-SW42B | -091522 | 09/15/2022 | 0901 | 7.23 | 9.59 | 24.89 | 17.4 | 5.19 | 5.4 | 176 | 4.2 |
| MSA-SW42C | -091522 | 09/15/2022 | 0905 | 7.22 | 9.64 | 24.99 | 15.5 | 5.17 | 5.4 | 175 | 5.8 |
| MSA-SW42D | -091522 | 09/15/2022 | 0907 | 7.23 | 9.69 | 25.09 | 14.6 | 4.86 | 5.4 | 175 | >6 |
| MSA-SW43A | -091522 | 09/15/2022 | 0801 | 5.49 | 10.1 | 24.32 | 18.8 | 6.15 | 5.6 | 263 | 3.2 |
| MSA-SW43B | -091522 | 09/15/2022 | 0804 | 6.3 | 9.93 | 24.8 | 15.7 | 5.4 | 5.6 | 249 | 4.5 |
| MSA-SW43C | -091522 | 09/15/2022 | 0806 | 6.56 | 9.9 | 24.94 | 15.1 | 5.46 | 5.6 | 239 | 5.2 |
| MSA-SW43D | -091522 | 09/15/2022 | 0809 | 6.84 | 9.95 | 24.98 | 12.8 | 5.34 | 5.6 | 225 | >6 |
| MSA-SW46A | -091522 | 09/15/2022 | 0855 | 7.23 | 9.6 | 24.85 | 22.5 | 5.25 | 5.4 | 178 | 3.2 |
| MSA-SW47A | -091522 | 09/15/2022 | 0842 | 7.18 | 9.44 | 24.75 | 20.6 | 4.72 | 5.3 | 185 | 3.2 |
| MSA-SW48A | -091522 | 09/15/2022 | 0827 | 7.14 | 9.54 | 24.78 | 20.6 | 5.29 | 5.4 | 196 | 3.6 |
| MSA-SW49A | -091522 | 09/15/2022 | 0813 | 6.96 | 9.66 | 24.83 | 23.3 | 4.94 | 5.4 | 216 | 3 |

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37A - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW37A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0911 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.25 | 9.55 | 25 | 20 | 5.32 | 5.4 | 123 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37B - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW37B | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0914 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.25 | 9.58 | 24.95 | 20.2 | 4.89 | 5.4 | 172 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37C - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW37C | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0916 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.25 | 9.53 | 24.85 | 16.9 | 5.01 | 5.3 | 172 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.5 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | September 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW37D - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW37D | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0919 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.26 | 9.55 | 24.94 | 14.8 | 5.31 | 5.4 | 172 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38A - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW38A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0831 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.16 | 9.53 | 24.78 | 24.44 | 4.94 | 5.3 | 101 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38B - 091522 | **Sampled By: Mullis M** | |
| **Sample Location:** | MSA-SW38B | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0833 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.16 | 9.58 | 24.82 | 24.4 | 4.98 | 5.4 | 189 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.4 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38C - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW38C | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0836 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.17 | 9.6 | 24.85 | 22 | 5.2 | 5.2 | 188 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.7 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW38D - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW38D | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0838 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.17 | 9.6 | 24.84 | 21.4 | 4.97 | 5.4 | 187 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40A - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW40A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0845 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.17 | 9.61 | 24.82 | 23.6 | 5.07 | 5.4 | 183 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40B - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW40B | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0847 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.18 | 9.63 | 24.94 | 16.4 | 5.15 | 5.4 | 181 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.3 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40C - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW40C | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0849 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.21 | 9.65 | 24.96 | 16 | 5.32 | 5.4 | 180 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW40D - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-40D | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0852 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 9.62 | 24.9 | 14.4 | 5.38 | 5.4 | 180 | | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41A - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW41A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0817 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 0.03 | 9.64 | 24.67 | 16.6 | 5.03 | 5.4 | 208 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.5 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41B - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW41B | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0819 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.07 | 9.65 | 24.81 | 15.2 | 5.28 | 5.4 | 204 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.1 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41C - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW41C | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0822 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.09 | 9.67 | 24.85 | 18.7 | 4.88 | 5.4 | 201 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW41D - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW41D | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0824 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.11 | 9.69 | 24.94 | 19.1 | 5.25 | 5.4 | 199 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | September 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42A - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW42A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0859 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.23 | 9.58 | 24.77 | 16.4 | 4.99 | 5.4 | 177 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 2.8 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42B - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW42B | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0901 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.23 | 9.59 | 24.89 | 17.4 | 5.19 | 5.4 | 176 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42C - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW42C | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0905 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.22 | 9.64 | 24.99 | 15.5 | 5.17 | 5.4 | 175 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.8 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | September 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW42D - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-42D | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0907 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.23 | 9.69 | 25.09 | 14.6 | 4.86 | 5.4 | 175 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43A - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW43A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0801 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 5.49 | 10.1 | 24.32 | 18.8 | 6.15 | 5.6 | 263 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43B - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW43B | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0804 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 6.3 | 9.93 | 24.8 | 15.7 | 5.4 | 5.6 | 249 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 4.5 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | September 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43C - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW43C | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0806 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 6.56 | 9.94 | 24.94 | 15.1 | 5.46 | 5.6 | 239 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 5.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

| | |
|---|---|
| **Event:** | September 2022 Surface Water Sampling |
| **Project Site Name:** | Frog Mortar Creek, Martin State Airport |
| **Project No.:** | 112IC09567 |

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW43D - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-43D | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0809 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 6.84 | 9.95 | 24.98 | 12.8 | 5.34 | 5.6 | 225 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = >6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
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**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW46A - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW46A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0855 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.23 | 9.6 | 24.85 | 22.5 | 5.25 | 5.4 | 178 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
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**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW47A - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW47A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0842 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

[ ] Stream [ ] Pond [X] Low Concentration
[ ] Spring [ ] Lake [ ] High Concentration
[ X ] Other (Tidal creek - freshwater)

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.18 | 9.44 | 24.75 | 20.6 | 4.72 | 5.3 | 185 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.2 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW48A - 091522 | **Sampled By:** Mullis | |
| **Sample Location:** | MSA-SW48A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0827 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 7.14 | 9.54 | 24.78 | 20.6 | 5.29 | 5.4 | 196 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3.6 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

# SURFACE WATER SAMPLE LOG SHEET

TETRA TECH

**Event:** September 2022 Surface Water Sampling
**Project Site Name:** Frog Mortar Creek, Martin State Airport
**Project No.:** 112IC09567

| | | | |
|---|---|---|---|
| **Sample ID:** | MSA-SW49A - 091522 | **Sampled By: Mullis** | |
| **Sample Location:** | MSA-SW49A | **Sample Date:** | 15 September, 2022 |
| **QA/QC Duplicate ID:** | | **Sample Time:** | 0813 |
| **MS/MSD Collected:** | YES NO | | |

**MATRIX / CONCENTRATION:**

**[ ] Stream** **[ ] Pond** **[X ] Low Concentration**
**[ ] Spring** **[ ] Lake** **[ ] High Concentration**
**[ X ] Other (Tidal creek - freshwater)**

**SAMPLE DATA:**

| Method | Depth | Color | pH (S.U.) | S.C. (mS/cm) | Temp. (C°) | Turbidity (NTU) | DO (mg/L) | Salinity (% or ppt) | ORP (mV) | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Grab | 1 ft below surface | clear | 6.96 | 9.66 | 24.83 | 23.2 | 4.94 | 5.4 | 216 | |

**ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS**

| Analysis | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|---|---|---|---|---|---|---|
| VOCs, TICs | USEPA SW846 Method 8260C | HCl pH<2 | 3 | 40 mL | glass | yes |
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**OBSERVATIONS / NOTES:**

Water depth = 3 feet

**MAP:**


| Coordinates: | N | E |
|---|---|---|
| | | |

**Signature(s):** Joshua Mullis

Baltimore MD Precipitation
*** PLEASE NOTE ***
Climate data on this page are PRELIMINARY (unofficial).
CERTIFIED (official) climate data are available from the
National Centers for Environmental Information (NCEI) - http://www.ncdc.noaa.gov/
*** PLEASE NOTE ***

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | WINTER | SPRING | SUMMER | AUTUMN | 1ST HALF | 2ND HALF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1871 | 1.55 | 1.38 | 3.03 | 1.90 | 2.03 | 2.82 | 6.15 | 3.41 | 2.22 | 3.11 | 3.24 | 1.90 | 32.74 | M | 6.96 | 12.38 | 8.57 | 12.71 | 20.03 |
| 1872 | 0.88 | 1.46 | 3.06 | 3.06 | 1.44 | 4.16 | 1.58 | 4.59 | 5.06 | 4.08 | 3.17 | 2.22 | 34.76 | 4.24 | 7.56 | 10.33 | 12.31 | 14.06 | 20.70 |
| 1873 | 4.27 | 4.74 | 3.02 | 2.77 | 6.31 | 0.94 | 2.90 | 9.49 | 3.70 | 6.21 | 4.05 | 0.97 | 49.37 | 11.23 | 12.10 | 13.33 | 13.96 | 22.05 | 27.32 |
| 1874 | 2.22 | 3.18 | 1.41 | 6.65 | 1.92 | 1.11 | 4.30 | 3.47 | 4.83 | 0.16 | 2.48 | 1.90 | 33.63 | 6.37 | 9.98 | 8.88 | 7.47 | 16.49 | 17.14 |
| 1875 | 2.51 | 2.91 | 4.72 | 4.27 | 1.49 | 2.85 | 4.78 | 8.67 | 3.62 | 1.44 | 4.86 | 3.14 | 45.26 | 7.32 | 10.48 | 16.30 | 9.92 | 18.75 | 26.51 |
| 1876 | 1.67 | 2.96 | 6.37 | 1.90 | 4.94 | 4.09 | 5.64 | 1.76 | 10.52 | 2.80 | 2.74 | 1.32 | 46.71 | 7.77 | 13.21 | 11.49 | 16.06 | 21.93 | 24.78 |
| 1877 | 3.80 | 1.87 | 3.60 | 3.30 | 2.23 | 3.53 | 4.25 | 0.64 | 5.27 | 5.22 | 6.85 | 2.23 | 42.79 | 6.99 | 9.13 | 8.42 | 17.34 | 18.33 | 24.46 |
| 1878 | 4.51 | 3.31 | 4.74 | 4.19 | 5.38 | 4.09 | 4.76 | 4.82 | 0.82 | 4.41 | 3.55 | 5.61 | 50.19 | 10.05 | 14.31 | 13.67 | 8.78 | 26.22 | 23.97 |
| 1879 | 2.59 | 1.55 | 1.65 | 3.69 | 2.74 | 3.92 | 3.16 | 6.71 | 2.72 | 0.75 | 1.30 | 5.23 | 36.01 | 9.75 | 8.08 | 13.79 | 4.77 | 16.14 | 19.87 |
| 1880 | 2.26 | 1.96 | 4.82 | 3.07 | 1.23 | 5.48 | 6.47 | 4.44 | 1.78 | 2.64 | 2.88 | 4.89 | 41.92 | 9.45 | 9.12 | 16.39 | 7.30 | 18.82 | 23.10 |
| 1881 | 4.84 | 5.68 | 7.59 | 2.00 | 2.30 | 7.81 | 1.40 | 2.15 | 2.98 | 4.06 | 2.41 | 5.90 | 49.12 | 15.41 | 11.89 | 11.36 | 9.45 | 30.22 | 18.90 |
| 1882 | 5.38 | 3.73 | 3.43 | 2.14 | 3.42 | 2.30 | 4.02 | 5.10 | 9.38 | 0.86 | 0.65 | 1.70 | 42.11 | 15.01 | 8.99 | 11.42 | 10.89 | 20.40 | 21.71 |
| 1883 | 3.16 | 4.69 | 3.68 | 3.20 | 1.22 | 8.08 | 3.10 | 2.72 | 3.49 | 2.83 | 1.37 | 2.98 | 40.52 | 9.55 | 8.10 | 13.90 | 7.69 | 24.03 | 16.49 |
| 1884 | 4.81 | 6.69 | 6.37 | 2.65 | 3.17 | 2.51 | 9.43 | 1.74 | 0.09 | 1.42 | 3.09 | 3.91 | 45.88 | 14.48 | 12.19 | 13.68 | 4.60 | 26.20 | 19.68 |
| 1885 | 3.07 | 4.40 | 1.60 | 1.37 | 4.50 | 6.31 | 2.67 | 7.78 | 1.30 | 6.51 | 4.04 | 2.49 | 46.04 | 11.38 | 7.47 | 16.76 | 11.85 | 21.25 | 24.79 |
| 1886 | 4.48 | 5.49 | 4.85 | 2.06 | 7.07 | 5.64 | 8.08 | 3.94 | 1.90 | 1.39 | 4.09 | 3.12 | 52.11 | 12.46 | 13.98 | 17.66 | 7.38 | 29.59 | 22.52 |
| 1887 | 2.57 | 4.69 | 3.49 | 2.44 | 2.57 | 4.44 | 8.32 | 4.15 | 2.80 | 1.06 | 2.02 | 5.04 | 43.59 | 10.38 | 8.50 | 16.91 | 5.88 | 20.20 | 23.39 |
| 1888 | 3.35 | 2.83 | 4.62 | 2.11 | 4.22 | 3.22 | 2.82 | 6.17 | 4.90 | 2.99 | 3.04 | 3.26 | 43.53 | 11.22 | 10.95 | 12.21 | 10.93 | 20.35 | 23.18 |
| 1889 | 4.22 | 2.53 | 5.71 | 8.70 | 6.82 | 6.17 | 11.03 | 1.40 | 4.59 | 4.12 | 6.45 | 0.61 | 62.35 | 10.01 | 21.23 | 18.60 | 15.16 | 34.15 | 28.20 |
| 1890 | 1.80 | 4.80 | 4.07 | 3.94 | 5.98 | 2.42 | 3.61 | 6.44 | 4.76 | 5.73 | 0.74 | 2.67 | 46.96 | 7.21 | 13.99 | 12.47 | 11.23 | 23.01 | 23.95 |
| 1891 | 4.89 | 5.52 | 7.94 | 2.48 | 3.11 | 5.45 | 7.79 | 4.24 | 5.46 | 2.76 | 1.33 | 3.24 | 54.21 | 13.08 | 13.53 | 17.48 | 9.55 | 29.39 | 24.82 |
| 1892 | 6.42 | 2.41 | 7.20 | 3.15 | 6.35 | 4.87 | 4.07 | 1.83 | 2.36 | 0.26 | 3.85 | 2.28 | 45.05 | 12.07 | 16.70 | 10.77 | 6.47 | 30.40 | 14.65 |
| 1893 | 1.78 | 4.43 | 1.38 | 3.52 | 3.78 | 2.26 | 1.88 | 1.81 | 1.80 | 3.44 | 3.78 | 2.29 | 32.15 | 8.49 | 8.68 | 5.95 | 9.02 | 17.15 | 15.00 |
| 1894 | 1.46 | 3.53 | 1.19 | 3.80 | 7.26 | 3.29 | 1.73 | 1.41 | 4.75 | 3.80 | 1.98 | 4.12 | 38.32 | 7.28 | 12.25 | 6.43 | 10.53 | 20.53 | 17.79 |
| 1895 | 4.67 | 0.83 | 2.94 | 7.42 | 3.04 | 2.83 | 3.40 | 2.43 | 6.01 | 2.20 | 1.86 | 2.84 | 40.47 | 9.62 | 13.40 | 8.66 | 10.07 | 21.73 | 18.74 |
| 1896 | 2.62 | 7.07 | 4.70 | 1.44 | 1.61 | 3.94 | 6.32 | 1.93 | 4.14 | 1.11 | 3.34 | 0.37 | 38.59 | 12.53 | 7.75 | 12.19 | 8.59 | 21.38 | 17.21 |

Baltimore MD Precipitation

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | WINTER | SPRING | SUMMER | AUTUMN | 1ST HALF | 2ND HALF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1897 | 2.05 | 5.13 | 2.40 | 3.19 | 6.88 | 2.57 | 6.93 | 4.71 | 2.17 | 3.67 | 4.39 | 3.40 | 47.49 | 7.55 | 12.47 | 14.21 | 10.23 | 22.22 | 25.27 | |
| 1898 | 2.99 | 1.32 | 2.58 | 1.84 | 3.86 | 1.06 | 3.51 | 6.09 | 1.56 | 3.97 | 4.34 | 3.34 | 36.46 | 7.71 | 8.28 | 10.66 | 9.87 | 13.65 | 22.81 | |
| 1899 | 3.50 | 5.47 | 4.93 | 1.89 | 3.29 | 2.16 | 1.64 | 4.86 | 7.09 | 2.09 | 2.27 | 1.40 | 40.59 | 12.31 | 10.11 | 8.66 | 11.45 | 21.24 | 19.35 | |
| 1900 | 2.11 | 4.65 | 3.17 | 2.06 | 1.00 | 4.34 | 1.51 | 2.91 | 4.26 | 1.68 | 1.81 | 2.07 | 31.57 | 8.16 | 6.23 | 8.76 | 7.75 | 17.33 | 14.24 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1901 | 2.45 | 0.65 | 3.58 | 5.53 | 3.67 | 0.90 | 6.18 | 6.73 | 2.50 | 1.52 | 2.26 | 7.07 | 43.04 | 5.17 | 12.78 | 13.81 | 6.28 | 16.78 | 26.26 | |
| 1902 | 3.05 | 4.68 | 3.41 | 2.90 | 1.62 | 4.30 | 2.45 | 4.31 | 7.19 | 6.85 | 3.71 | 5.66 | 50.13 | 14.80 | 7.93 | 11.06 | 17.75 | 19.96 | 30.17 | |
| 1903 | 3.81 | 5.43 | 4.40 | 3.29 | 3.33 | 5.01 | 7.65 | 5.88 | 1.00 | 3.54 | 0.73 | 2.19 | 46.26 | 14.90 | 11.02 | 18.54 | 5.27 | 25.27 | 20.99 | |
| 1904 | 2.86 | 1.50 | 2.88 | 2.37 | 1.84 | 3.27 | 4.58 | 1.95 | 5.90 | 3.73 | 1.87 | 3.34 | 36.09 | 6.55 | 7.09 | 9.80 | 11.50 | 14.72 | 21.37 | |
| 1905 | 4.69 | 2.40 | 3.23 | 3.07 | 1.82 | 4.05 | 10.65 | 6.85 | 2.14 | 2.04 | 1.35 | 4.32 | 46.61 | 10.43 | 8.12 | 21.55 | 5.53 | 19.26 | 27.35 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1906 | 3.22 | 2.21 | 4.63 | 3.31 | 2.73 | 5.10 | 7.96 | 5.80 | 0.32 | 5.74 | 1.74 | 4.06 | 46.82 | 9.75 | 10.67 | 18.86 | 7.80 | 21.20 | 25.62 | |
| 1907 | 3.14 | 1.93 | 2.94 | 3.13 | 2.92 | 5.22 | 5.76 | 4.60 | 8.52 | 1.61 | 5.02 | 4.30 | 49.09 | 9.13 | 8.99 | 15.58 | 15.15 | 19.28 | 29.81 | |
| 1908 | 3.49 | 4.71 | 2.50 | 1.09 | 4.04 | 1.08 | 4.34 | 5.17 | 2.59 | 2.59 | 0.77 | 3.04 | 35.41 | 12.50 | 7.63 | 10.59 | 5.95 | 16.91 | 18.50 | |
| 1909 | 2.78 | 3.25 | 4.58 | 2.18 | 4.59 | 4.38 | 1.31 | 0.86 | 3.97 | 1.03 | 1.15 | 4.62 | 34.70 | 9.07 | 11.35 | 6.55 | 6.15 | 21.76 | 12.94 | |
| 1910 | 4.68 | 2.28 | 0.46 | 7.76 | 2.95 | 5.30 | 0.95 | 1.37 | 2.13 | 2.71 | 1.93 | 2.45 | 34.97 | 11.58 | 11.17 | 7.62 | 6.77 | 23.43 | 11.54 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1911 | 3.48 | 2.31 | 2.45 | 2.69 | 3.45 | 5.52 | 3.53 | 12.28 | 1.60 | 3.31 | 4.28 | 3.68 | 48.58 | 8.24 | 8.59 | 21.33 | 9.19 | 19.90 | 28.68 | |
| 1912 | 2.63 | 2.75 | 6.64 | 1.94 | 3.30 | 3.09 | 5.96 | 3.25 | 8.75 | 0.72 | 1.93 | 4.17 | 45.13 | 9.06 | 11.88 | 12.30 | 11.40 | 20.35 | 24.78 | |
| 1913 | 2.45 | 1.61 | 3.89 | 5.15 | 3.12 | 1.47 | 2.63 | 6.38 | 1.51 | 3.50 | 1.82 | 2.58 | 36.11 | 8.23 | 12.16 | 10.48 | 6.83 | 17.69 | 18.42 | |
| 1914 | 5.66 | 2.89 | 1.80 | 4.55 | 1.17 | 1.64 | 2.55 | 6.74 | 1.64 | 1.24 | 2.18 | 4.34 | 36.40 | 11.13 | 7.52 | 10.93 | 5.06 | 17.71 | 18.69 | |
| 1915 | 6.81 | 4.75 | 1.06 | 1.37 | 3.19 | 6.23 | 2.22 | 9.93 | 2.30 | 3.86 | 1.59 | 3.08 | 46.39 | 15.90 | 5.62 | 18.38 | 7.75 | 23.41 | 22.98 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1916 | 1.51 | 3.21 | 3.61 | 3.68 | 3.49 | 5.33 | 5.04 | 0.83 | 1.82 | 1.61 | 1.97 | 3.94 | 36.04 | 7.80 | 10.78 | 11.20 | 5.40 | 20.83 | 15.21 | |
| 1917 | 3.04 | 1.75 | 3.80 | 2.21 | 3.24 | 4.05 | 7.09 | 2.39 | 2.86 | 5.01 | 0.52 | 1.96 | 37.92 | 8.73 | 9.25 | 13.53 | 8.39 | 18.09 | 19.83 | |
| 1918 | 5.00 | 1.04 | 4.17 | 6.79 | 3.17 | 1.75 | 2.28 | 3.35 | 3.01 | 0.76 | 1.50 | 4.72 | 37.54 | 8.00 | 14.13 | 7.38 | 5.27 | 21.92 | 15.62 | |
| 1919 | 3.51 | 2.62 | 4.22 | 4.05 | 5.46 | 2.69 | 7.21 | 6.45 | 2.31 | 2.50 | 3.10 | 3.11 | 47.23 | 10.85 | 13.73 | 16.35 | 7.91 | 22.55 | 24.68 | |
| 1920 | 1.87 | 3.41 | 2.56 | 4.84 | 2.30 | 8.25 | 4.94 | 9.47 | 3.08 | 0.17 | 3.96 | 3.58 | 48.43 | 8.39 | 9.70 | 22.66 | 7.21 | 23.23 | 25.20 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1921 | 2.05 | 2.85 | 2.60 | 2.59 | 5.99 | 1.97 | 4.93 | 3.49 | 3.19 | 1.61 | 4.37 | 2.08 | 37.72 | 8.48 | 11.18 | 10.39 | 9.17 | 18.05 | 19.67 | |
| 1922 | 4.88 | 2.94 | 4.83 | 0.88 | 4.00 | 4.45 | 7.28 | 1.11 | 2.69 | 5.58 | 0.44 | 3.43 | 42.51 | 9.90 | 9.71 | 12.84 | 8.71 | 21.98 | 20.53 | |
| 1923 | 4.14 | 2.51 | 4.12 | 3.68 | 2.59 | 1.84 | 2.04 | 3.14 | 3.85 | 2.83 | 2.04 | 3.88 | 36.66 | 10.08 | 10.39 | 7.02 | 8.72 | 18.88 | 17.78 | |
| 1924 | 4.33 | 4.14 | 6.66 | 5.89 | 5.80 | 5.54 | 1.99 | 5.22 | 5.75 | 0.05 | 1.37 | 2.30 | 49.04 | 12.35 | 18.35 | 12.75 | 7.17 | 32.36 | 16.68 | |
| 1925 | 5.35 | 0.98 | 2.00 | 2.66 | 1.86 | 1.01 | 5.57 | 2.41 | 0.75 | 5.43 | 3.16 | 1.54 | 32.72 | 8.63 | 6.52 | 8.99 | 9.34 | 13.86 | 18.86 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1926 | 3.10 | 4.27 | 2.19 | 1.46 | 2.60 | 2.46 | 5.74 | 5.58 | 4.19 | 4.24 | 6.46 | 2.89 | 45.18 | 8.91 | 6.25 | 13.78 | 14.89 | 16.08 | 29.10 | |
| 1927 | 1.38 | 3.78 | 1.47 | 5.48 | 2.03 | 2.96 | 1.41 | 3.04 | 1.95 | 6.90 | 2.22 | 3.61 | 36.23 | 8.05 | 8.98 | 7.41 | 11.07 | 17.10 | 19.13 | |
| 1928 | 2.76 | 2.89 | 3.12 | 6.26 | 3.09 | 4.43 | 3.54 | 9.70 | 4.35 | 0.26 | 1.78 | 1.22 | 43.40 | 9.26 | 12.47 | 17.67 | 6.39 | 22.55 | 20.85 | |
| 1929 | 2.90 | 3.45 | 3.16 | 6.73 | 1.78 | 4.82 | 1.13 | 4.04 | 2.79 | 6.77 | 2.44 | 2.46 | 42.47 | 7.57 | 11.67 | 9.99 | 12.00 | 22.84 | 19.63 | |

Last updated 11/1/2022

Baltimore MD Precipitation

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | WINTER | SPRING | SUMMER | AUTUMN | 1ST HALF | 2ND HALF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1930 | 2.66 | 2.38 | 2.27 | 3.12 | 2.91 | 2.97 | 0.64 | 0.78 | 0.37 | 0.37 | 1.13 | 1.95 | 21.55 | 7.50 | 8.30 | 4.39 | 1.87 | 16.31 | 5.24 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1931 | 1.89 | 1.41 | 4.62 | 2.77 | 5.80 | 1.89 | 6.04 | 7.98 | 2.05 | 1.79 | 1.13 | 2.20 | 39.57 | 5.25 | 13.19 | 15.91 | 4.97 | 18.38 | 21.19 | |
| 1932 | 5.85 | 2.08 | 6.48 | 2.15 | 5.51 | 2.91 | 2.42 | 3.92 | 1.47 | 7.17 | 6.17 | 3.45 | 49.58 | 10.13 | 14.14 | 9.25 | 14.81 | 24.98 | 24.60 | |
| 1933 | 3.37 | 2.95 | 4.60 | 7.58 | 5.17 | 3.09 | 3.90 | 13.83 | 3.28 | 1.76 | 0.96 | 2.47 | 52.96 | 9.77 | 17.35 | 20.82 | 6.00 | 26.76 | 26.20 | |
| 1934 | 2.53 | 3.29 | 4.47 | 2.32 | 4.04 | 5.39 | 2.24 | 6.63 | 12.41 | 0.95 | 3.51 | 3.10 | 50.88 | 8.29 | 10.83 | 14.26 | 16.87 | 22.04 | 28.84 | |
| 1935 | 4.79 | 2.74 | 2.82 | 5.12 | 4.51 | 5.01 | 4.55 | 3.97 | 7.59 | 2.63 | 5.63 | 2.16 | 51.52 | 10.63 | 12.45 | 13.53 | 15.85 | 24.99 | 26.53 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1936 | 5.94 | 3.75 | 6.42 | 2.56 | 3.18 | 1.48 | 4.89 | 4.60 | 2.16 | 1.73 | 0.79 | 7.10 | 44.60 | 11.85 | 12.16 | 10.97 | 4.68 | 23.33 | 21.27 | |
| 1937 | 6.74 | 3.52 | 1.93 | 7.92 | 3.27 | 3.53 | 3.81 | 5.06 | 1.10 | 7.75 | 5.21 | 0.95 | 50.79 | 17.36 | 13.12 | 12.40 | 14.06 | 26.91 | 23.88 | |
| 1938 | 2.23 | 3.10 | 2.44 | 1.40 | 4.86 | 1.49 | 4.87 | 2.43 | 5.05 | 2.15 | 2.11 | 2.66 | 34.79 | 6.28 | 8.70 | 8.79 | 9.31 | 15.52 | 19.27 | |
| 1939 | 3.77 | 6.52 | 3.75 | 5.92 | 1.47 | 3.86 | 2.41 | 3.52 | 3.08 | 4.01 | 0.76 | 1.87 | 40.94 | 12.95 | 11.14 | 9.79 | 7.85 | 25.29 | 15.65 | |
| 1940 | 1.81 | 3.97 | 3.97 | 6.99 | 4.41 | 2.37 | 2.85 | 5.60 | 1.32 | 2.37 | 5.99 | 2.68 | 44.33 | 7.65 | 15.37 | 10.82 | 9.68 | 23.52 | 20.81 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1941 | 3.29 | 1.07 | 2.20 | 3.29 | 3.61 | 7.77 | 5.61 | 1.60 | 0.50 | 0.99 | 1.32 | 3.48 | 34.73 | 7.04 | 9.10 | 14.98 | 2.81 | 21.23 | 13.50 | |
| 1942 | 2.04 | 2.79 | 6.50 | 0.88 | 4.19 | 2.26 | 4.46 | 7.01 | 1.82 | 7.75 | 2.36 | 3.96 | 46.02 | 8.31 | 11.57 | 13.73 | 11.93 | 18.66 | 27.36 | |
| 1943 | 3.53 | 2.08 | 4.38 | 2.56 | 4.76 | 1.29 | 4.95 | 0.86 | 1.84 | 6.29 | 2.77 | 1.44 | 36.75 | 9.57 | 11.70 | 7.10 | 10.90 | 18.60 | 18.15 | |
| 1944 | 5.04 | 2.20 | 6.04 | 3.80 | 1.72 | 2.55 | 2.81 | 4.22 | 5.39 | 4.01 | 3.93 | 3.83 | 45.54 | 8.68 | 11.56 | 9.58 | 13.33 | 21.35 | 24.19 | |
| 1945 | 3.75 | 3.44 | 1.41 | 3.55 | 3.50 | 2.65 | 9.68 | 2.48 | 5.06 | 1.18 | 3.92 | 5.99 | 46.61 | 11.02 | 8.46 | 14.81 | 10.16 | 18.30 | 28.31 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1946 | 1.66 | 3.33 | 1.89 | 1.56 | 6.39 | 3.65 | 5.37 | 4.02 | 3.98 | 2.59 | 1.24 | 1.97 | 37.65 | 10.98 | 9.84 | 13.04 | 7.81 | 18.48 | 19.17 | |
| 1947 | 3.89 | 1.87 | 1.54 | 5.56 | 3.95 | 7.48 | 4.92 | 3.74 | 3.54 | 1.20 | 6.92 | 1.63 | 46.24 | 7.73 | 11.05 | 16.14 | 11.66 | 24.29 | 21.95 | |
| 1948 | 5.83 | 1.89 | 3.85 | 2.92 | 6.41 | 9.36 | 1.94 | 5.75 | 2.27 | 3.62 | 5.40 | 5.47 | 54.71 | 9.35 | 13.18 | 17.05 | 11.29 | 30.26 | 24.45 | |
| 1949 | 6.13 | 3.41 | 2.74 | 2.44 | 5.90 | 1.19 | 3.24 | 2.82 | 2.33 | 4.11 | 1.13 | 2.25 | 37.69 | 15.01 | 11.08 | 7.25 | 7.57 | 21.81 | 15.88 | |
| 1950 | 2.13 | 4.12 | 4.30 | 1.37 | 5.00 | 3.81 | 3.07 | 2.66 | 5.93 | 2.67 | 2.05 | 3.74 | 40.85 | 8.50 | 10.67 | 9.54 | 10.65 | 20.73 | 20.12 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1951 | 2.88 | 3.36 | 3.70 | 3.69 | 3.92 | 8.80 | 1.84 | 0.77 | 4.13 | 2.02 | 6.20 | 4.49 | 45.80 | 9.98 | 11.31 | 11.41 | 12.35 | 26.35 | 19.45 | |
| 1952 | 4.14 | 2.59 | 4.77 | 8.15 | 4.97 | 3.19 | 6.71 | 4.71 | 5.68 | 0.51 | 7.68 | 3.47 | 56.57 | 11.22 | 17.89 | 14.61 | 13.87 | 27.81 | 28.76 | |
| 1953 | 4.56 | 2.74 | 6.80 | 4.43 | 6.37 | 2.90 | 4.94 | 4.26 | 4.05 | 2.83 | 1.32 | 3.05 | 48.25 | 10.77 | 17.60 | 12.10 | 8.20 | 27.80 | 20.45 | |
| 1954 | 2.02 | 1.21 | 3.96 | 3.07 | 2.07 | 0.15 | 1.77 | 4.10 | 1.16 | 3.24 | 2.42 | 2.72 | 27.89 | 6.28 | 9.10 | 6.02 | 6.82 | 12.48 | 15.41 | |
| 1955 | 0.29 | 2.68 | 3.34 | 2.34 | 2.34 | 6.73 | 0.30 | 18.35 | 0.56 | 5.66 | 1.35 | 0.20 | 44.14 | 5.69 | 8.02 | 25.38 | 7.57 | 17.72 | 26.42 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1956 | 2.49 | 3.38 | 4.11 | 2.18 | 2.38 | 2.11 | 7.06 | 1.81 | 3.42 | 4.65 | 2.69 | 3.22 | 39.50 | 6.07 | 8.67 | 10.98 | 10.76 | 16.65 | 22.85 | |
| 1957 | 2.28 | 2.61 | 2.27 | 2.46 | 0.55 | 4.08 | 1.25 | 2.44 | 5.63 | 2.21 | 2.87 | 5.30 | 33.95 | 8.11 | 5.28 | 7.77 | 10.71 | 14.25 | 19.70 | |
| 1958 | 3.45 | 3.51 | 6.18 | 4.29 | 2.75 | 3.65 | 7.73 | 6.26 | 1.27 | 2.51 | 2.15 | 1.39 | 45.14 | 12.26 | 13.22 | 17.64 | 5.93 | 23.83 | 21.31 | |
| 1959 | 2.39 | 1.82 | 2.72 | 3.44 | 2.82 | 3.68 | 6.00 | 4.39 | 0.82 | 4.16 | 2.12 | 3.57 | 37.93 | 5.60 | 8.98 | 14.07 | 7.10 | 16.87 | 21.06 | |
| 1960 | 2.31 | 4.95 | 2.82 | 3.40 | 7.10 | 1.27 | 8.18 | 4.30 | 6.38 | 2.12 | 1.08 | 2.92 | 46.83 | 10.83 | 13.32 | 13.75 | 9.58 | 21.85 | 24.98 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1961 | 2.91 | 4.63 | 3.87 | 4.45 | 2.72 | 5.19 | 4.57 | 4.31 | 1.57 | 3.70 | 1.98 | 2.85 | 42.75 | 10.46 | 11.04 | 14.07 | 7.25 | 23.77 | 18.98 | |

Last updated 11/1/2022

Baltimore MD Precipitation

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | WINTER | SPRING | SUMMER | AUTUMN | 1ST HALF | 2ND HALF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1962 | 2.02 | 4.41 | 4.85 | 4.25 | 2.43 | 3.16 | 2.09 | 2.26 | 2.39 | 2.96 | 6.50 | 2.92 | 40.24 | 9.28 | 11.53 | 7.51 | 11.85 | 21.12 | 19.12 | |
| 1963 | 1.84 | 2.07 | 4.68 | 2.15 | 1.70 | 9.16 | 0.69 | 4.21 | 4.12 | T | 6.85 | 2.08 | 39.55 | 6.83 | 8.53 | 14.06 | 10.97 | 21.60 | 17.95 | |
| 1964 | 5.27 | 4.36 | 2.98 | 4.37 | 0.43 | 2.40 | 2.66 | 1.96 | 2.61 | 1.19 | 2.51 | 3.94 | 34.68 | 11.71 | 7.78 | 7.02 | 6.31 | 19.81 | 14.87 | |
| 1965 | 3.09 | 2.89 | 4.31 | 1.72 | 1.79 | 1.94 | 2.61 | 4.72 | 1.94 | 1.90 | 0.68 | 0.63 | 28.22 | 9.92 | 7.82 | 9.27 | 4.52 | 15.74 | 12.48 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1966 | 4.15 | 4.24 | 0.93 | 4.39 | 4.53 | 1.18 | 1.48 | 1.87 | 8.50 | 4.80 | 2.78 | 3.53 | 42.38 | 9.02 | 9.85 | 4.53 | 16.08 | 19.42 | 22.96 | |
| 1967 | 0.99 | 2.25 | 4.39 | 1.73 | 3.79 | 1.89 | 3.56 | 8.87 | 0.21 | 1.34 | 2.60 | 5.31 | 36.93 | 6.77 | 9.91 | 14.32 | 4.15 | 15.04 | 21.89 | |
| 1968 | 3.42 | 0.72 | 4.41 | 1.61 | 5.41 | 3.35 | 2.75 | 4.16 | 4.39 | 3.13 | 3.85 | 2.60 | 39.80 | 9.45 | 11.43 | 10.26 | 11.37 | 18.92 | 20.88 | |
| 1969 | 1.38 | 1.75 | 1.63 | 1.80 | 1.46 | 3.65 | 5.22 | 3.81 | 2.60 | 1.10 | 1.74 | 7.44 | 33.58 | 5.73 | 4.89 | 12.68 | 5.44 | 11.67 | 21.91 | |
| 1970 | 0.94 | 3.34 | 3.07 | 4.53 | 1.69 | 4.10 | 4.32 | 1.33 | 0.46 | 3.04 | 5.11 | 3.50 | 35.43 | 11.72 | 9.29 | 9.75 | 8.61 | 17.67 | 17.76 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1971 | 2.02 | 6.21 | 1.90 | 1.75 | 6.12 | 2.92 | 4.03 | 10.91 | 5.55 | 6.88 | 3.75 | 1.29 | 53.33 | 11.73 | 9.77 | 17.86 | 16.18 | 20.92 | 32.41 | |
| 1972 | 2.82 | 6.01 | 2.38 | 5.30 | 4.11 | 9.95 | 2.81 | 2.22 | 1.15 | 3.51 | 7.05 | 5.02 | 52.33 | 10.12 | 11.79 | 14.98 | 11.71 | 30.57 | 21.76 | |
| 1973 | 2.81 | 2.82 | 3.96 | 6.41 | 3.73 | 3.16 | 4.22 | 3.35 | 4.87 | 2.86 | 1.28 | 6.36 | 45.83 | 10.65 | 14.10 | 10.73 | 9.01 | 22.89 | 22.94 | |
| 1974 | 2.92 | 0.94 | 4.12 | 2.59 | 3.58 | 2.84 | 0.85 | 5.85 | 5.45 | 1.53 | 1.39 | 5.70 | 37.76 | 10.22 | 10.29 | 9.54 | 8.37 | 16.99 | 20.77 | |
| 1975 | 3.47 | 2.47 | 5.17 | 2.73 | 4.63 | 3.82 | 7.15 | 4.23 | 8.62 | 2.89 | 2.03 | 4.61 | 51.82 | 11.64 | 12.53 | 15.20 | 13.54 | 22.29 | 29.53 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1976 | 4.10 | 2.16 | 2.23 | 1.27 | 5.03 | 2.49 | 5.56 | 2.98 | 6.93 | 8.09 | 0.56 | 2.04 | 43.44 | 10.87 | 8.53 | 11.03 | 15.58 | 17.28 | 26.16 | |
| 1977 | 1.36 | 0.63 | 3.93 | 3.05 | 1.49 | 3.44 | 2.62 | 3.31 | 0.62 | 5.17 | 5.01 | 5.76 | 36.39 | 4.03 | 8.47 | 9.37 | 10.80 | 13.90 | 22.49 | |
| 1978 | 7.34 | 0.56 | 4.74 | 1.26 | 5.49 | 2.81 | 6.83 | 3.39 | 1.03 | 0.71 | 2.70 | 4.63 | 41.49 | 13.66 | 11.49 | 13.03 | 4.44 | 22.20 | 19.29 | |
| 1979 | 7.84 | 7.16 | 2.05 | 3.37 | 4.15 | 5.74 | 3.71 | 9.38 | 6.73 | 5.53 | 2.45 | 0.87 | 58.98 | 19.63 | 9.57 | 18.83 | 14.71 | 30.31 | 28.67 | |
| 1980 | 2.58 | 1.06 | 5.46 | 4.24 | 3.58 | 3.04 | 3.25 | 4.00 | 1.00 | 3.08 | 2.72 | 0.70 | 34.71 | 4.51 | 13.28 | 10.29 | 6.80 | 19.96 | 14.75 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1981 | 0.49 | 2.93 | 1.14 | 2.04 | 3.63 | 5.40 | 4.59 | 1.93 | 2.89 | 2.57 | 0.31 | 3.30 | 31.22 | 4.12 | 6.81 | 11.92 | 5.77 | 15.63 | 15.59 | |
| 1982 | 3.37 | 4.04 | 3.03 | 3.61 | 1.85 | 5.70 | 2.16 | 0.95 | 3.63 | 2.31 | 3.13 | 2.39 | 36.17 | 10.71 | 8.49 | 8.81 | 9.07 | 21.60 | 14.57 | |
| 1983 | 2.21 | 4.81 | 6.80 | 6.55 | 5.47 | 5.23 | 1.31 | 1.57 | 1.76 | 3.58 | 5.02 | 6.72 | 51.03 | 9.41 | 18.82 | 8.11 | 10.36 | 31.07 | 19.96 | |
| 1984 | 1.96 | 3.90 | 5.79 | 2.95 | 4.29 | 1.65 | 3.27 | 4.11 | 2.38 | 1.94 | 3.01 | 1.71 | 36.96 | 12.58 | 13.03 | 9.03 | 7.33 | 20.54 | 16.42 | |
| 1985 | 2.03 | 3.03 | 2.37 | 0.39 | 6.01 | 2.44 | 2.53 | 3.72 | 6.22 | 2.48 | 4.71 | 0.84 | 36.77 | 6.77 | 8.77 | 8.69 | 13.41 | 16.27 | 20.50 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1986 | 2.16 | 3.78 | 0.96 | 2.64 | 0.37 | 1.46 | 4.12 | 4.26 | 0.58 | 1.86 | 5.96 | 5.52 | 33.67 | 6.78 | 3.97 | 9.84 | 8.40 | 11.37 | 22.30 | |
| 1987 | 5.85 | 2.22 | 0.99 | 1.86 | 4.16 | 2.63 | 5.05 | 1.61 | 7.34 | 2.25 | 5.05 | 2.07 | 41.08 | 13.59 | 7.01 | 9.29 | 14.64 | 17.71 | 23.37 | |
| 1988 | 3.24 | 3.25 | 2.35 | 2.44 | 4.37 | 0.84 | 3.78 | 2.64 | 2.05 | 1.59 | 4.78 | 0.97 | 32.30 | 8.56 | 9.16 | 7.26 | 8.42 | 16.49 | 15.81 | |
| 1989 | 3.07 | 3.36 | 4.24 | 3.16 | 8.71 | 5.98 | 7.35 | 3.38 | 3.64 | 4.90 | 1.97 | 2.12 | 51.88 | 7.40 | 16.11 | 16.71 | 10.51 | 28.52 | 23.36 | |
| 1990 | 3.71 | 1.48 | 2.54 | 4.23 | 4.92 | 2.55 | 5.68 | 6.17 | 1.07 | 2.57 | 2.10 | 4.86 | 41.88 | 7.31 | 11.69 | 14.40 | 5.74 | 19.43 | 22.45 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1991 | 3.54 | 0.73 | 5.65 | 1.68 | 1.16 | 1.08 | 1.76 | 2.54 | 3.05 | 3.20 | 1.69 | 4.08 | 30.16 | 9.13 | 8.49 | 5.38 | 7.94 | 13.84 | 16.32 | |
| 1992 | 1.27 | 2.49 | 4.58 | 1.76 | 2.92 | 1.89 | 5.07 | 2.19 | 5.96 | 2.73 | 3.44 | 4.63 | 38.93 | 7.84 | 9.26 | 9.15 | 12.13 | 14.91 | 24.02 | |
| 1993 | 2.73 | 2.84 | 8.12 | 3.68 | 3.66 | 2.56 | 1.71 | 2.55 | 4.09 | 3.02 | 3.09 | 4.45 | 42.50 | 10.20 | 15.46 | 6.82 | 10.20 | 23.59 | 18.91 | |
| 1994 | 4.59 | 4.07 | 8.64 | 2.53 | 3.02 | 2.84 | 4.54 | 3.44 | 3.93 | 1.82 | 1.95 | 1.95 | 43.32 | 13.11 | 14.19 | 10.82 | 7.70 | 25.69 | 17.63 | |

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Baltimore MD Precipitation

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | WINTER | SPRING | SUMMER | AUTUMN | 1ST HALF | 2ND HALF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 | 2.87 | 1.88 | 2.12 | 1.92 | 3.40 | 1.80 | 3.65 | 2.98 | 3.29 | 6.24 | 4.12 | 2.66 | 36.93 | 6.70 | 7.44 | 8.43 | 13.65 | 13.99 | 22.94 | |
| | | | | | | | | | | | | | | | | | | | | |
| 1996 | 6.80 | 2.36 | 3.57 | 3.76 | 5.68 | 4.08 | 7.38 | 4.17 | 5.65 | 4.32 | 3.77 | 6.77 | 58.31 | 11.82 | 13.01 | 15.63 | 13.74 | 26.25 | 32.06 | |
| 1997 | 2.83 | 2.23 | 5.67 | 2.40 | 3.03 | 3.74 | 1.49 | 4.21 | 1.47 | 3.43 | 5.79 | 2.05 | 38.34 | 11.83 | 11.10 | 9.44 | 10.69 | 19.90 | 18.44 | |
| 1998 | 5.65 | 6.40 | 5.56 | 3.02 | 3.46 | 3.22 | 1.42 | 0.91 | 1.27 | 1.06 | 1.13 | 1.27 | 34.37 | 14.10 | 12.04 | 5.55 | 3.46 | 27.31 | 7.06 | |
| 1999 | 4.70 | 2.65 | 3.46 | 2.27 | 1.73 | 2.04 | 2.06 | 6.14 | 11.50 | 2.48 | 1.95 | 2.96 | 43.94 | 8.62 | 7.46 | 10.24 | 15.93 | 16.85 | 27.09 | |
| 2000 | 3.64 | 2.01 | 4.35 | 5.06 | 2.82 | 5.54 | 5.64 | 3.18 | 5.55 | 0.08 | 1.73 | 2.31 | 41.91 | 8.61 | 12.23 | 14.36 | 7.36 | 23.42 | 18.49 | |
| | | | | | | | | | | | | | | | | | | | | |
| 2001 | 2.68 | 2.35 | 4.76 | 1.32 | 5.34 | 3.58 | 3.85 | 5.74 | 1.43 | 0.78 | 1.01 | 1.73 | 34.57 | 7.34 | 11.42 | 13.17 | 3.22 | 20.03 | 14.54 | |
| 2002 | 2.19 | 0.36 | 3.75 | 4.08 | 2.99 | 2.39 | 2.26 | 3.66 | 3.17 | 6.01 | 3.78 | 4.96 | 39.60 | 4.28 | 10.82 | 8.31 | 12.96 | 15.76 | 23.84 | |
| 2003 | 2.59 | 6.70 | 4.17 | 2.40 | 6.81 | 6.96 | 5.56 | 4.61 | 7.47 | 5.82 | 4.86 | 4.71 | 62.66 | 14.25 | 13.38 | 17.13 | 18.15 | 29.63 | 33.03 | |
| 2004 | 1.26 | 2.40 | 2.73 | 5.33 | 5.05 | 4.17 | 8.69 | 2.71 | 3.94 | 1.44 | 5.02 | 2.93 | 45.67 | 8.37 | 13.11 | 15.57 | 10.40 | 20.94 | 24.73 | |
| 2005 | 3.75 | 1.66 | 5.13 | 3.81 | 2.64 | 3.74 | 8.77 | 3.71 | 0.67 | 9.23 | 2.12 | 3.90 | 49.13 | 8.34 | 11.58 | 16.22 | 12.02 | 20.73 | 28.40 | |
| | | | | | | | | | | | | | | | | | | | | |
| 2006 | 3.48 | 2.64 | 0.18 | 3.27 | 1.60 | 7.32 | 1.86 | 1.45 | 7.56 | 5.75 | 6.25 | 1.88 | 43.24 | 10.02 | 5.05 | 10.63 | 19.56 | 18.49 | 24.75 | |
| 2007 | 2.48 | 2.04 | 4.17 | 5.00 | 0.94 | 2.20 | 3.31 | 3.08 | 0.35 | 5.85 | 1.52 | 4.03 | 34.97 | 6.40 | 10.11 | 8.59 | 7.72 | 16.83 | 18.14 | |
| 2008 | 1.47 | 3.80 | 2.37 | 4.62 | 7.77 | 3.70 | 5.47 | 1.48 | 7.22 | 1.27 | 2.61 | 3.19 | 44.97 | 9.30 | 14.76 | 10.65 | 11.10 | 23.73 | 21.24 | |
| 2009 | 2.73 | 0.26 | 2.07 | 5.80 | 8.42 | 5.52 | 3.29 | 4.76 | 3.48 | 6.24 | 4.94 | 8.06 | 55.57 | 6.18 | 16.29 | 13.57 | 14.66 | 24.80 | 30.77 | |
| 2010 | 2.24 | 4.15 | 5.53 | 2.20 | 3.49 | 1.55 | 4.36 | 4.74 | 8.26 | 2.95 | 2.04 | 1.96 | 43.47 | 14.45 | 11.22 | 10.65 | 13.25 | 19.16 | 24.31 | |
| | | | | | | | | | | | | | | | | | | | | |
| 2011 | 2.66 | 2.69 | 4.99 | 3.52 | 2.42 | 3.51 | 2.77 | 10.38 | 13.32 | 3.31 | 2.45 | 4.50 | 56.52 | 7.31 | 10.93 | 16.66 | 19.08 | 19.79 | 36.73 | |
| 2012 | 2.54 | 2.42 | 1.76 | 1.99 | 1.99 | 2.68 | 3.27 | 5.82 | 2.21 | 8.92 | 0.71 | 3.11 | 37.42 | 9.46 | 5.74 | 11.77 | 11.84 | 13.38 | 24.04 | |
| 2013 | 3.64 | 1.95 | 2.64 | 2.20 | 3.43 | 7.81 | 2.77 | 1.13 | 1.65 | 7.62 | 2.82 | 5.27 | 42.93 | 8.70 | 8.27 | 11.71 | 12.09 | 21.67 | 21.26 | |
| 2014 | 2.71 | 4.58 | 4.38 | 8.60 | 3.35 | 3.95 | 2.80 | 7.90 | 3.21 | 4.16 | 3.36 | 3.58 | 52.58 | 12.56 | 16.33 | 14.65 | 10.73 | 27.57 | 25.01 | |
| 2015 | 3.89 | 2.24 | 4.67 | 4.30 | 2.10 | 13.09 | 3.49 | 2.46 | 3.25 | 3.40 | 2.42 | 5.85 | 51.16 | 9.71 | 11.07 | 19.04 | 9.07 | 30.29 | 20.87 | |
| | | | | | | | | | | | | | | | | | | | | |
| 2016 | 3.50 | 5.70 | 2.10 | 1.31 | 5.24 | 3.20 | 6.09 | 3.96 | 4.36 | 0.78 | 1.51 | 2.77 | 40.52 | 15.05 | 8.65 | 13.25 | 6.65 | 21.05 | 19.47 | |
| 2017 | 2.69 | 1.46 | 3.82 | 3.52 | 5.64 | 1.40 | 7.11 | 4.60 | 1.95 | 2.99 | 2.15 | 0.95 | 38.28 | 6.92 | 12.98 | 13.11 | 7.09 | 18.53 | 19.75 | |
| 2018 | 1.00 | 5.30 | 2.25 | 3.20 | 8.17 | 4.77 | 16.73 | 3.84 | 9.19 | 2.69 | 8.14 | 6.54 | 71.82 | 7.25 | 13.62 | 25.34 | 20.02 | 24.69 | 47.13 | |
| 2019 | 3.15 | 3.64 | 4.14 | 1.46 | 5.51 | 2.95 | 3.85 | 2.39 | 0.16 | 6.21 | 1.10 | 3.57 | 38.13 | 13.33 | 11.11 | 9.19 | 7.47 | 20.85 | 17.28 | |
| 2020 | 3.11 | 2.98 | 3.05 | 5.52 | 1.76 | 5.95 | 3.43 | 11.81 | 4.48 | 4.36 | 6.35 | 4.58 | 57.38 | 9.66 | 10.33 | 21.19 | 15.19 | 22.37 | 35.01 | |
| | | | | | | | | | | | | | | | | | | | | |
| 2021 | 2.15 | 4.85 | 3.90 | 2.07 | 3.63 | 2.75 | 3.65 | 4.36 | 6.04 | 5.24 | 1.33 | 0.82 | 40.79 | 11.58 | 9.60 | 10.76 | 12.61 | 19.35 | 21.44 | |
| 2022 | 4.27 | 2.31 | 3.13 | 3.92 | 5.39 | 2.95 | 6.25 | 3.71 | 3.35 | 4.66 | | | 39.94 | 7.40 | 12.44 | 12.91 | 8.01 | 21.97 | 17.97 | |
| | | | | | | | | | | | | | | | | | | | | |
| NORM | 3.08 | 2.90 | 4.01 | 3.39 | 3.85 | 3.98 | 4.48 | 4.09 | 4.44 | 3.94 | 3.13 | 3.71 | 45.00 | 9.69 | 11.25 | 12.55 | 11.51 | 21.21 | 23.79 | 1991-2020 |
| | | | | | | | | | | | | | | | | | | | | |
| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | WINTER | SPRING | SUMMER | AUTUMN | 1ST HALF | 2ND HALF | |

Last updated 11/1/2022

**Appendix B is not included and available upon request.**

# APPENDIX B—DATA-VALIDATION REPORTS, CHAINS OF CUSTODY, AND LABORATORY ANALYTICAL REPORTS

# APPENDIX C—CHEMICAL-RESULTS DATA TABLES

**Table C-1**
**Frog Mortar Creek Surface Water Results—September 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37B | MSA-SW37C | MSA-SW37D | MSA-SW38A | MSA-SW38B | MSA-SW38C | MSA-SW38D |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-091522 | MSA-SW37B-091522 | MSA-SW37C-091522 | MSA-SW37D-091522 | MSA-SW38A-091522 | MSA-SW38B-091522 | MSA-SW38C-091522 | MSA-SW38D-091522 |
| SAMPLE DATE | | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 |
| MATRIX | | SW | SW | SW | SW | SW | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.46 J |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.48 J | 0.44 U | 0.44 U | 0.44 U | 0.67 J | 0.44 U | 0.71 J |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.46 J |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | | | | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-1**
**Frog Mortar Creek Surface Water Results—September 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40A | MSA-SW40B | MSA-SW40C | MSA-SW40D | MSA-SW41A | MSA-SW41B | MSA-SW41C | MSA-SW41D |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40A-091522 | MSA-SW40B-091522 | MSA-SW40C-091522 | MSA-SW40D-091522 | MSA-SW41A-091522 | MSA-SW41B-091522 | MSA-SW41C-091522 | MSA-SW41D-091522 |
| SAMPLE DATE | | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 |
| MATRIX | | SW | SW | SW | SW | SW | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| M+P-XYLENES | UG/L | 0.42 U | 0.89 J | 0.42 U | 0.81 J | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.49 J | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.71 J | 1.6 | 0.44 U | 1.4 | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 1.4 J | 0.42 U | 0.81 J | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | | | | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-1**
**Frog Mortar Creek Surface Water Results—September 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42A | MSA-SW42B | MSA-SW42C | MSA-SW42D | MSA-SW43A | MSA-SW43B | MSA-SW43C | MSA-SW43D |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42A-091522 | MSA-SW42B-091522 | MSA-SW42C-091522 | MSA-SW42D-091522 | MSA-SW43A-019522 | MSA-SW43B-091522 | MSA-SW43C-091522 | MSA-SW43D-091522 |
| SAMPLE DATE | | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 | 20220915 |
| MATRIX | | SW | SW | SW | SW | SW | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | | | | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ | 1.6 J | 0.31 UJ | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U | 0.52 UJ | 4.5 | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 UJ | 1.2 UJ | 1.2 UJ | 1.2 UJ |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U | 5.4 U | 5.4 UJ | 5.4 UJ | 5.4 UJ | 5.4 UJ |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 2.2 | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 UJ | 0.17 UJ | 0.17 UJ |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 UJ | 0.40 UJ | 0.40 UJ | 0.40 UJ |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 2.1 | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| M+P-XYLENES | UG/L | 0.54 J | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 7.7 | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 0.80 U | 1.9 | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 UJ | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 4.2 | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 UJ | 0.43 UJ | 0.43 UJ |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 U | 7.2 UJ | 7.2 UJ | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.99 J | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 12 | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.54 J | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 12 | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 UJ | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | | | | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-1**
**Frog Mortar Creek Surface Water Results—September 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW47A | MSA-SW48A | MSA-SW49A |
|---|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-091522 | MSA-SW47A-091522 | MSA-SW48A-091522 | MSA-SW49A-091522 |
| SAMPLE DATE | | 20220915 | 20220915 | 20220915 | 20220915 |
| MATRIX | | SW | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 UJ | 0.31 UJ | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 UJ | 0.78 UJ | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 UJ | 1.2 UJ | 1.2 UJ | 1.2 UJ |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 UJ | 5.4 UJ | 5.4 UJ | 5.4 UJ |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 UJ | 0.17 UJ | 0.17 UJ | 0.17 UJ |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 UJ | 0.40 UJ | 0.40 UJ | 0.40 UJ |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| M+P-XYLENES | UG/L | 0.43 J | 0.66 J | 0.42 U | 0.67 J |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 UJ | 0.43 UJ | 0.43 UJ | 0.43 UJ |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 UJ | 7.2 UJ | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.72 J | 1 | 0.44 U | 1.1 |
| TOTAL XYLENES | UG/L | 0.43 J | 0.66 J | 0.42 U | 0.67 J |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37A | MSA-SW37A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-031122 | MSA-SW37A-070622 | MSA-SW37A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37A | MSA-SW37A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-031122 | MSA-SW37A-070622 | MSA-SW37A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37A | MSA-SW37A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-031122 | MSA-SW37A-070622 | MSA-SW37A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 U | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37B | MSA-SW37B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-091522 | MSA-SW37B-031122 | MSA-SW37B-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37B | MSA-SW37B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-091522 | MSA-SW37B-031122 | MSA-SW37B-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37A | MSA-SW37B | MSA-SW37B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37A-091522 | MSA-SW37B-031122 | MSA-SW37B-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 U | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37B | MSA-SW37B | MSA-SW37C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37B-082222 | MSA-SW37B-091522 | MSA-SW37C-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37B | MSA-SW37B | MSA-SW37C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37B-082222 | MSA-SW37B-091522 | MSA-SW37C-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37B | MSA-SW37B | MSA-SW37C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37B-082222 | MSA-SW37B-091522 | MSA-SW37C-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.48 J | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37C | MSA-SW37C | MSA-SW37C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37C-070622 | MSA-SW37C-082222 | MSA-SW37C-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37C | MSA-SW37C | MSA-SW37C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37C-070622 | MSA-SW37C-082222 | MSA-SW37C-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37C | MSA-SW37C | MSA-SW37C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37C-070622 | MSA-SW37C-082222 | MSA-SW37C-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37D | MSA-SW37D | MSA-SW37D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37D-031122 | MSA-SW37D-070622 | MSA-SW37D-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37D | MSA-SW37D | MSA-SW37D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37D-031122 | MSA-SW37D-070622 | MSA-SW37D-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37D | MSA-SW37D | MSA-SW37D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37D-031122 | MSA-SW37D-070622 | MSA-SW37D-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37D | MSA-SW38A | MSA-SW38A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37D-091522 | MSA-SW38A-031122 | MSA-SW38A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | **MSA-SW37D** | **MSA-SW38A** | **MSA-SW38A** |
|---|---|---|---|---|
| SAMPLE ID | | **MSA-SW37D-091522** | **MSA-SW38A-031122** | **MSA-SW38A-070622** |
| SAMPLE DATE | | **20220915** | **20220311** | **20220706** |
| SAMPLE CODE | | **NORMAL** | **NORMAL** | **NORMAL** |
| MATRIX | | **SW** | **SW** | **SW** |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW37D | MSA-SW38A | MSA-SW38A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW37D-091522 | MSA-SW38A-031122 | MSA-SW38A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38A | MSA-SW38A | MSA-SW38B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38A-082222 | MSA-SW38A-091522 | MSA-SW38B-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38A | MSA-SW38A | MSA-SW38B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38A-082222 | MSA-SW38A-091522 | MSA-SW38B-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38A | MSA-SW38A | MSA-SW38B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38A-082222 | MSA-SW38A-091522 | MSA-SW38B-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38B | MSA-SW38B | MSA-SW38B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38B-070622 | MSA-SW38B-082222 | MSA-SW38B-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38B | MSA-SW38B | MSA-SW38B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38B-070622 | MSA-SW38B-082222 | MSA-SW38B-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38B | MSA-SW38B | MSA-SW38B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38B-070622 | MSA-SW38B-082222 | MSA-SW38B-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.67 J |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38C | MSA-SW38C | MSA-SW38C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38C-031122 | MSA-SW38C-070622 | MSA-SW38C-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38C | MSA-SW38C | MSA-SW38C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38C-031122 | MSA-SW38C-070622 | MSA-SW38C-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38C | MSA-SW38C | MSA-SW38C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38C-031122 | MSA-SW38C-070622 | MSA-SW38C-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38C | MSA-SW38D | MSA-SW38D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38C-091522 | MSA-SW38D-031122 | MSA-SW38D-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38C | MSA-SW38D | MSA-SW38D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38C-091522 | MSA-SW38D-031122 | MSA-SW38D-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38C | MSA-SW38D | MSA-SW38D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38C-091522 | MSA-SW38D-031122 | MSA-SW38D-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38D | MSA-SW38D | MSA-SW40A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38D-082222 | MSA-SW38D-091522 | MSA-SW40A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38D | MSA-SW38D | MSA-SW40A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38D-082222 | MSA-SW38D-091522 | MSA-SW40A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW38D | MSA-SW38D | MSA-SW40A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW38D-082222 | MSA-SW38D-091522 | MSA-SW40A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.46 J | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.71 J | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.46 J | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40A | MSA-SW40A | MSA-SW40A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40A-070622 | MSA-SW40A-082222 | MSA-SW40A-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40A | MSA-SW40A | MSA-SW40A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40A-070622 | MSA-SW40A-082222 | MSA-SW40A-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40A | MSA-SW40A | MSA-SW40A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40A-070622 | MSA-SW40A-082222 | MSA-SW40A-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.71 J |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40B | MSA-SW40B | MSA-SW40B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40B-031122 | MSA-SW40B-070622 | MSA-SW40B-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40B | MSA-SW40B | MSA-SW40B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40B-031122 | MSA-SW40B-070622 | MSA-SW40B-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40B | MSA-SW40B | MSA-SW40B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40B-031122 | MSA-SW40B-070622 | MSA-SW40B-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40B | MSA-SW40C | MSA-SW40C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40B-091522 | MSA-SW40C-031122 | MSA-SW40C-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40B | MSA-SW40C | MSA-SW40C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40B-091522 | MSA-SW40C-031122 | MSA-SW40C-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40B | MSA-SW40C | MSA-SW40C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40B-091522 | MSA-SW40C-031122 | MSA-SW40C-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.89 J | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.49 J | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 1.6 | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 1.4 J | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40C | MSA-SW40C | MSA-SW40D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40C-082222 | MSA-SW40C-091522 | MSA-SW40D-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40C | MSA-SW40C | MSA-SW40D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40C-082222 | MSA-SW40C-091522 | MSA-SW40D-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40C | MSA-SW40C | MSA-SW40D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40C-082222 | MSA-SW40C-091522 | MSA-SW40D-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40D | MSA-SW40D | MSA-SW40D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40D-070622 | MSA-SW40D-082222 | MSA-SW40D-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40D | MSA-SW40D | MSA-SW40D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40D-070622 | MSA-SW40D-082222 | MSA-SW40D-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW40D | MSA-SW40D | MSA-SW40D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW40D-070622 | MSA-SW40D-082222 | MSA-SW40D-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.81 J |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 1.4 |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.81 J |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41A | MSA-SW41A | MSA-SW41A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41A-031122 | MSA-SW41A-070622 | MSA-SW41A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41A | MSA-SW41A | MSA-SW41A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41A-031122 | MSA-SW41A-070622 | MSA-SW41A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41A | MSA-SW41A | MSA-SW41A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41A-031122 | MSA-SW41A-070622 | MSA-SW41A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41A | MSA-SW41B | MSA-SW41B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41A-091522 | MSA-SW41B-031122 | MSA-SW41B-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41A | MSA-SW41B | MSA-SW41B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41A-091522 | MSA-SW41B-031122 | MSA-SW41B-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41A | MSA-SW41B | MSA-SW41B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41A-091522 | MSA-SW41B-031122 | MSA-SW41B-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 U | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41B | MSA-SW41B | MSA-SW41C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41B-082222 | MSA-SW41B-091522 | MSA-SW41C-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41B | MSA-SW41B | MSA-SW41C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41B-082222 | MSA-SW41B-091522 | MSA-SW41C-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41B | MSA-SW41B | MSA-SW41C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41B-082222 | MSA-SW41B-091522 | MSA-SW41C-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 U |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41C | MSA-SW41C | MSA-SW41C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41C-070622 | MSA-SW41C-082222 | MSA-SW41C-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41C | MSA-SW41C | MSA-SW41C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41C-070622 | MSA-SW41C-082222 | MSA-SW41C-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41C | MSA-SW41C | MSA-SW41C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41C-070622 | MSA-SW41C-082222 | MSA-SW41C-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41D | MSA-SW41D | MSA-SW41D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41D-031122 | MSA-SW41D-070622 | MSA-SW41D-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41D | MSA-SW41D | MSA-SW41D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41D-031122 | MSA-SW41D-070622 | MSA-SW41D-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41D | MSA-SW41D | MSA-SW41D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41D-031122 | MSA-SW41D-070622 | MSA-SW41D-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 U | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41D | MSA-SW42A | MSA-SW42A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41D-091522 | MSA-SW42A-031122 | MSA-SW42A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41D | MSA-SW42A | MSA-SW42A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41D-091522 | MSA-SW42A-031122 | MSA-SW42A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW41D | MSA-SW42A | MSA-SW42A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW41D-091522 | MSA-SW42A-031122 | MSA-SW42A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 U | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42A | MSA-SW42A | MSA-SW42B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42A-082222 | MSA-SW42A-091522 | MSA-SW42B-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42A | MSA-SW42A | MSA-SW42B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42A-082222 | MSA-SW42A-091522 | MSA-SW42B-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 UJ | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42A | MSA-SW42A | MSA-SW42B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42A-082222 | MSA-SW42A-091522 | MSA-SW42B-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.54 J | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.99 J | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.54 J | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 U |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42B | MSA-SW42B | MSA-SW42B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42B-070622 | MSA-SW42B-082222 | MSA-SW42B-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42B | MSA-SW42B | MSA-SW42B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42B-070622 | MSA-SW42B-082222 | MSA-SW42B-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 UJ | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42B | MSA-SW42B | MSA-SW42B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42B-070622 | MSA-SW42B-082222 | MSA-SW42B-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 UJ |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42C | MSA-SW42C | MSA-SW42C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42C-031122 | MSA-SW42C-070622 | MSA-SW42C-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42C | MSA-SW42C | MSA-SW42C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42C-031122 | MSA-SW42C-070622 | MSA-SW42C-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 UJ |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42C | MSA-SW42C | MSA-SW42C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42C-031122 | MSA-SW42C-070622 | MSA-SW42C-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 U | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42C | MSA-SW42D | MSA-SW42D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42C-091522 | MSA-SW42D-031122 | MSA-SW42D-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42C | MSA-SW42D | MSA-SW42D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42C-091522 | MSA-SW42D-031122 | MSA-SW42D-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42C | MSA-SW42D | MSA-SW42D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42C-091522 | MSA-SW42D-031122 | MSA-SW42D-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 UJ | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 UJ | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 U | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42D | MSA-SW42D | MSA-SW43A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42D-082222 | MSA-SW42D-091522 | MSA-SW43A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42D | MSA-SW42D | MSA-SW43A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42D-082222 | MSA-SW42D-091522 | MSA-SW43A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW42D | MSA-SW42D | MSA-SW43A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW42D-082222 | MSA-SW42D-091522 | MSA-SW43A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 UJ | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 UJ | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 U |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43A | MSA-SW43A | MSA-SW43A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43A-070622 | MSA-SW43A-082222 | MSA-SW43A-019522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 UJ |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 UJ |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 UJ |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43A | MSA-SW43A | MSA-SW43A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43A-070622 | MSA-SW43A-082222 | MSA-SW43A-019522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 UJ |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43A | MSA-SW43A | MSA-SW43A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43A-070622 | MSA-SW43A-082222 | MSA-SW43A-019522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 UJ |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43B | MSA-SW43B | MSA-SW43B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43B-031122 | MSA-SW43B-070622 | MSA-SW43B-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43B | MSA-SW43B | MSA-SW43B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43B-031122 | MSA-SW43B-070622 | MSA-SW43B-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43B | MSA-SW43B | MSA-SW43B |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43B-031122 | MSA-SW43B-070622 | MSA-SW43B-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 U | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43B | MSA-SW43C | MSA-SW43C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43B-091522 | MSA-SW43C-031122 | MSA-SW43C-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 1.6 J | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 4.5 | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 UJ | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 UJ | 5.4 U | 5.4 U |
| BENZENE | UG/L | 2.2 | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43B | MSA-SW43C | MSA-SW43C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43B-091522 | MSA-SW43C-031122 | MSA-SW43C-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 UJ | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 UJ | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 2.1 | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43B | MSA-SW43C | MSA-SW43C |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43B-091522 | MSA-SW43C-031122 | MSA-SW43C-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 7.7 | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 1.9 | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 4.2 | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 12 | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 12 | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 U | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43C | MSA-SW43C | MSA-SW43D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43C-082222 | MSA-SW43C-091522 | MSA-SW43D-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 UJ | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 UJ | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43C | MSA-SW43C | MSA-SW43D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43C-082222 | MSA-SW43C-091522 | MSA-SW43D-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 UJ | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 UJ | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43C | MSA-SW43C | MSA-SW43D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43C-082222 | MSA-SW43C-091522 | MSA-SW43D-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 U |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43D | MSA-SW43D | MSA-SW43D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43D-070622 | MSA-SW43D-082222 | MSA-SW43D-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 UJ |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 UJ |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43D | MSA-SW43D | MSA-SW43D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43D-070622 | MSA-SW43D-082222 | MSA-SW43D-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 UJ |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 UJ |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW43D | MSA-SW43D | MSA-SW43D |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW43D-070622 | MSA-SW43D-082222 | MSA-SW43D-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 UJ | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW46A | MSA-SW46A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-031122 | MSA-SW46A-070622 | MSA-SW46A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW46A | MSA-SW46A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-031122 | MSA-SW46A-070622 | MSA-SW46A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW46A | MSA-SW46A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-031122 | MSA-SW46A-070622 | MSA-SW46A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 U | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW47A | MSA-SW47A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-091522 | MSA-SW47A-031122 | MSA-SW47A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 UJ |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 UJ | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 UJ | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW47A | MSA-SW47A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-091522 | MSA-SW47A-031122 | MSA-SW47A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 U | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 UJ | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 UJ | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW46A | MSA-SW47A | MSA-SW47A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW46A-091522 | MSA-SW47A-031122 | MSA-SW47A-070622 |
| SAMPLE DATE | | 20220915 | 20220311 | 20220706 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.43 J | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 U | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 UJ |
| TOLUENE | UG/L | 0.72 J | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.43 J | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 U | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW47A | MSA-SW47A | MSA-SW48A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW47A-082222 | MSA-SW47A-091522 | MSA-SW48A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 UJ | 0.43 U | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 UJ | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | 2.1 NJ |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 UJ | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 UJ | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 UJ | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW47A | MSA-SW47A | MSA-SW48A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW47A-082222 | MSA-SW47A-091522 | MSA-SW48A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 U | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 UJ | 0.42 U | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | -- | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 UJ | 0.83 U | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 UJ | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 UJ | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW47A | MSA-SW47A | MSA-SW48A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW47A-082222 | MSA-SW47A-091522 | MSA-SW48A-031122 |
| SAMPLE DATE | | 20220822 | 20220915 | 20220311 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.66 J | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 UJ | 7.2 U |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 1 | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.66 J | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 U |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | 1 UJ | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW48A | MSA-SW48A | MSA-SW48A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW48A-070622 | MSA-SW48A-082222 | MSA-SW48A-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 UJ | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 UJ | 0.41 U | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 UJ |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 UJ |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW48A | MSA-SW48A | MSA-SW48A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW48A-070622 | MSA-SW48A-082222 | MSA-SW48A-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 UJ | 0.76 UJ | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 UJ | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | -- |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 UJ | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 UJ |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 UJ |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW48A | MSA-SW48A | MSA-SW48A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW48A-070622 | MSA-SW48A-082222 | MSA-SW48A-091522 |
| SAMPLE DATE | | 20220706 | 20220822 | 20220915 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ | 7.2 UJ | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 UJ | 0.44 U | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW49A | MSA-SW49A | MSA-SW49A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW49A-031122 | MSA-SW49A-070622 | MSA-SW49A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| **Volatile organic compounds** | **Units** | | | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U | 0.43 U | 0.43 UJ |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U | 0.41 UJ | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U | 0.49 U | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U | 0.36 U | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U | 0.54 U | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U | 0.77 U | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U | 0.52 U | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U | 0.91 U | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U | 0.47 U | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U | 0.21 U | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U | 0.41 U | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- | -- | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 U | 0.78 U | 0.78 U |
| 2-BUTANONE | UG/L | 1.2 U | 1.2 U | 1.2 U |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR | 1.5 UR | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U | 1.1 U | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U | 0.43 U | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U | 0.56 U | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U | 0.99 U | 0.99 U |
| ACETONE | UG/L | 5.4 U | 5.4 U | 5.4 U |
| BENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U | 0.50 U | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U | 0.54 U | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW49A | MSA-SW49A | MSA-SW49A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW49A-031122 | MSA-SW49A-070622 | MSA-SW49A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| BROMODICHLOROMETHANE | UG/L | 0.17 U | 0.17 U | 0.17 U |
| BROMOFORM | UG/L | 0.76 U | 0.76 UJ | 0.76 UJ |
| BROMOMETHANE | UG/L | 0.42 U | 0.42 U | 0.42 UJ |
| CARBON DISULFIDE | UG/L | 0.59 U | 0.59 U | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U | 0.26 U | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U | 0.38 U | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U | 0.39 U | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ | 1 UJ | 1 UJ |
| CHLOROETHANE | UG/L | 0.83 U | 0.83 U | 0.83 UJ |
| CHLOROFORM | UG/L | 0.47 U | 0.47 U | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U | 0.63 U | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U | 0.46 U | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U | 0.61 U | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U | 0.40 U | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U | 0.35 U | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 U | 0.17 U | 0.17 U |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 U | 0.40 U | 0.40 U |
| ETHYLBENZENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U | 0.83 U | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U | 0.49 U | 0.49 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | MSA-SW49A | MSA-SW49A | MSA-SW49A |
|---|---|---|---|---|
| SAMPLE ID | | MSA-SW49A-031122 | MSA-SW49A-070622 | MSA-SW49A-082222 |
| SAMPLE DATE | | 20220311 | 20220706 | 20220822 |
| SAMPLE CODE | | NORMAL | NORMAL | NORMAL |
| MATRIX | | SW | SW | SW |
| M+P-XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U | 0.47 U | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U | 2.6 U | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U | 0.80 U | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U | 0.60 U | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U | 0.57 U | 0.57 U |
| O-XYLENE | UG/L | 0.42 U | 0.42 U | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U | 0.53 U | 0.53 U |
| STYRENE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 U | 0.43 U | 0.43 U |
| TERT-BUTYLBENZENE | UG/L | 0.48 U | 0.48 U | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 U | 7.2 UJ | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U | 0.44 UJ | 0.44 U |
| TOLUENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TOTAL XYLENES | UG/L | 0.42 U | 0.42 U | 0.42 U |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U | 0.51 U | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U | 0.67 U | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U | 0.44 U | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 U | 0.61 UJ | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U | 0.45 U | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | | | |
| CHLORODIFLUOROMETHANE | UG/L | -- | -- | -- |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

NJ - analyte tentatively identified at estimated concentration shown

U - analyte not detected; concentration shown is detection limit

UJ - analyte not detected; reported detection limit is approximate

UR - analyte not detected; result is unusable, certain criteria not met

| LOCATION | | **MSA-SW49A** |
|---|---|---|
| SAMPLE ID | | **MSA-SW49A-091522** |
| SAMPLE DATE | | **20220915** |
| SAMPLE CODE | | **NORMAL** |
| MATRIX | | **SW** |
| **Volatile organic compounds** | **Units** | |
| 1,1,1,2-TETRACHLOROETHANE | UG/L | 0.43 U |
| 1,1,1-TRICHLOROETHANE | UG/L | 0.48 U |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | 0.60 U |
| 1,1,2-TRICHLOROTRIFLUOROETHANE | UG/L | 0.41 U |
| 1,1-DICHLOROETHANE | UG/L | 0.47 U |
| 1,1-DICHLOROETHENE | UG/L | 0.49 U |
| 1,1-DICHLOROPROPENE | UG/L | 0.36 U |
| 1,2,3-TRICHLOROBENZENE | UG/L | 0.54 U |
| 1,2,3-TRICHLOROPROPANE | UG/L | 0.52 U |
| 1,2,3-TRIMETHYLBENZENE | UG/L | 0.31 UJ |
| 1,2,4-TRICHLOROBENZENE | UG/L | 0.77 U |
| 1,2,4-TRIMETHYLBENZENE | UG/L | 0.52 U |
| 1,2-DIBROMO-3-CHLOROPROPANE | UG/L | 0.91 U |
| 1,2-DIBROMOETHANE | UG/L | 0.41 U |
| 1,2-DICHLOROBENZENE | UG/L | 0.48 U |
| 1,2-DICHLOROETHANE | UG/L | 0.21 U |
| 1,2-DICHLOROPROPANE | UG/L | 0.47 U |
| 1,3-DICHLOROBENZENE | UG/L | 0.45 U |
| 1,3-DICHLOROPROPANE | UG/L | 0.21 U |
| 1,4-DICHLOROBENZENE | UG/L | 0.41 U |
| 1-HEXANOL, 2-ETHYL- | UG/L | -- |
| 2,2-DICHLOROPROPANE | UG/L | 0.78 UJ |
| 2-BUTANONE | UG/L | 1.2 UJ |
| 2-CHLOROETHYL VINYL ETHER | UG/L | 1.5 UR |
| 2-CHLOROTOLUENE | UG/L | 0.57 U |
| 2-HEXANONE | UG/L | 1.1 U |
| 4-CHLOROTOLUENE | UG/L | 0.43 U |
| 4-ISOPROPYLTOLUENE | UG/L | 0.56 U |
| 4-METHYL-2-PENTANONE | UG/L | 0.99 U |
| ACETONE | UG/L | 5.4 UJ |
| BENZENE | UG/L | 0.42 U |
| BROMOBENZENE | UG/L | 0.50 U |
| BROMOCHLOROMETHANE | UG/L | 0.54 U |

**Table C-2**
**Frog Mortar Creek Surface Water Results, 2022**
**Martin State Airport, Lockheed Martin Middle River Complex**
**Middle River, Maryland**


| LOCATION | | **MSA-SW49A** |
|---|---|---|
| SAMPLE ID | | **MSA-SW49A-091522** |
| SAMPLE DATE | | **20220915** |
| SAMPLE CODE | | **NORMAL** |
| MATRIX | | **SW** |
| BROMODICHLOROMETHANE | UG/L | 0.17 U |
| BROMOFORM | UG/L | 0.76 U |
| BROMOMETHANE | UG/L | 0.42 U |
| CARBON DISULFIDE | UG/L | 0.59 U |
| CARBON TETRACHLORIDE | UG/L | 0.26 U |
| CHLOROBENZENE | UG/L | 0.38 U |
| CHLORODIBROMOMETHANE | UG/L | 0.39 U |
| CHLORODIFLUOROMETHANE | UG/L | -- |
| CHLOROETHANE | UG/L | 0.83 U |
| CHLOROFORM | UG/L | 0.47 U |
| CHLOROMETHANE | UG/L | 0.63 U |
| CIS-1,2-DICHLOROETHENE | UG/L | 0.46 U |
| CIS-1,3-DICHLOROPROPENE | UG/L | 0.61 U |
| DIBROMOMETHANE | UG/L | 0.40 U |
| DICHLORODIFLUOROMETHANE | UG/L | 0.35 U |
| DIISOPROPYL ETHER | UG/L | 0.17 UJ |
| ETHYL TERT-BUTYL ETHER | UG/L | 0.40 UJ |
| ETHYLBENZENE | UG/L | 0.42 U |
| HEXACHLOROBUTADIENE | UG/L | 0.83 U |
| ISOPROPYLBENZENE | UG/L | 0.49 U |

| LOCATION | | **MSA-SW49A** |
|---|---|---|
| SAMPLE ID | | **MSA-SW49A-091522** |
| SAMPLE DATE | | **20220915** |
| SAMPLE CODE | | **NORMAL** |
| MATRIX | | **SW** |
| M+P-XYLENES | UG/L | 0.67 J |
| METHYL TERT-BUTYL ETHER | UG/L | 0.47 U |
| METHYLENE CHLORIDE | UG/L | 2.6 U |
| NAPHTHALENE | UG/L | 0.80 U |
| N-BUTYLBENZENE | UG/L | 0.60 U |
| N-PROPYLBENZENE | UG/L | 0.57 U |
| O-XYLENE | UG/L | 0.42 U |
| SEC-BUTYLBENZENE | UG/L | 0.53 U |
| STYRENE | UG/L | 0.45 U |
| TERT-AMYL METHYL ETHER | UG/L | 0.43 UJ |
| TERT-BUTYLBENZENE | UG/L | 0.48 U |
| TERTIARY-BUTYL ALCOHOL | UG/L | 7.2 UJ |
| TETRACHLOROETHENE | UG/L | 0.44 U |
| TOLUENE | UG/L | 1.1 |
| TOTAL XYLENES | UG/L | 0.67 J |
| TRANS-1,2-DICHLOROETHENE | UG/L | 0.51 U |
| TRANS-1,3-DICHLOROPROPENE | UG/L | 0.67 U |
| TRICHLOROETHENE | UG/L | 0.44 U |
| TRICHLOROFLUOROMETHANE | UG/L | 0.45 U |
| VINYL ACETATE | UG/L | 0.61 UJ |
| VINYL CHLORIDE | UG/L | 0.45 U |
| **Tentatively identified compounds, volatiles** | **Units** | |
| CHLORODIFLUOROMETHANE | UG/L | 1 UJ |

Highlighting denotes analyte was detected

µg/L - micrograms per liter

J - estimated value

MSA - Martin State Airport

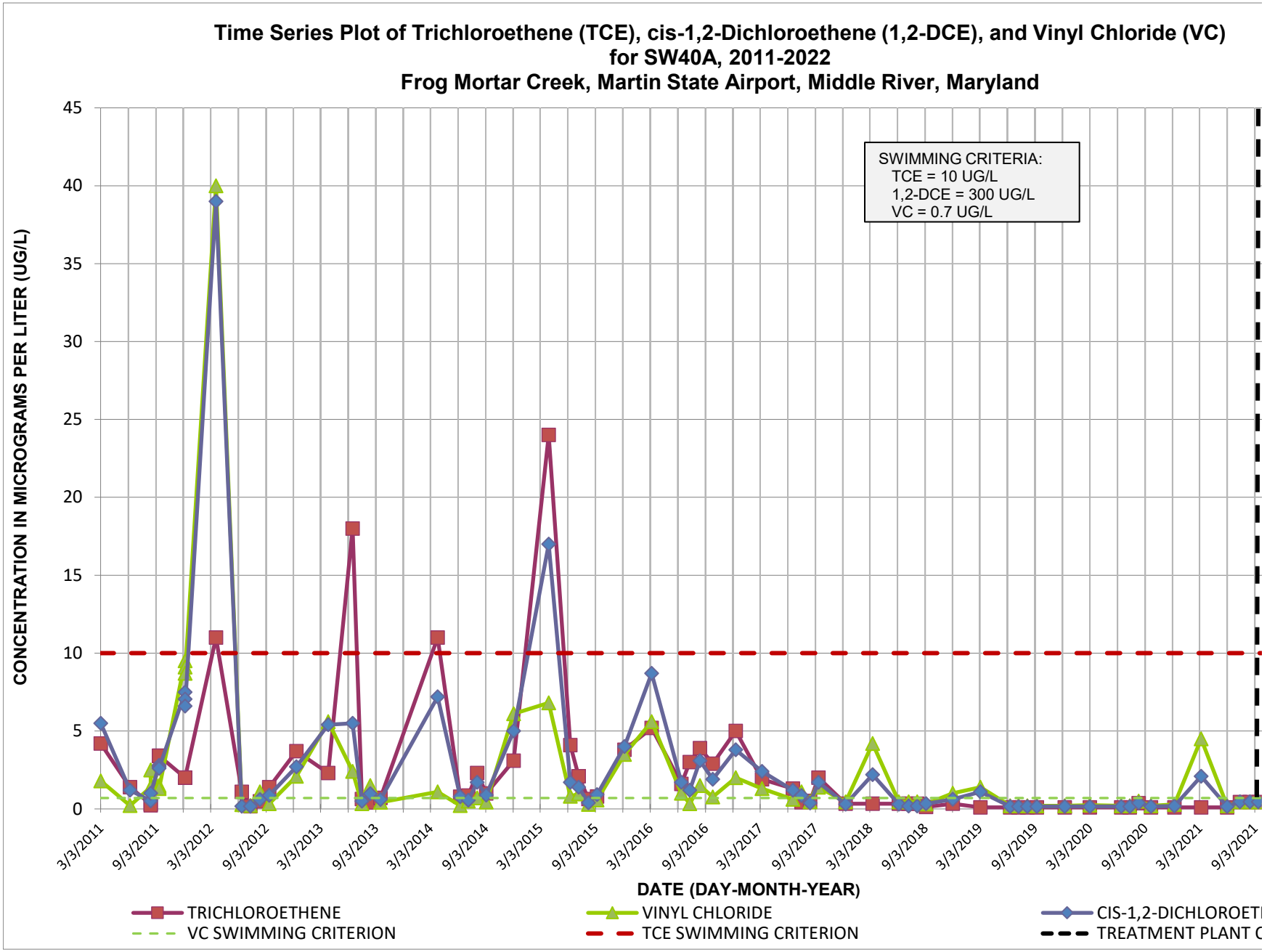
NJ - analyte tentatively identified at estimated concentration shown

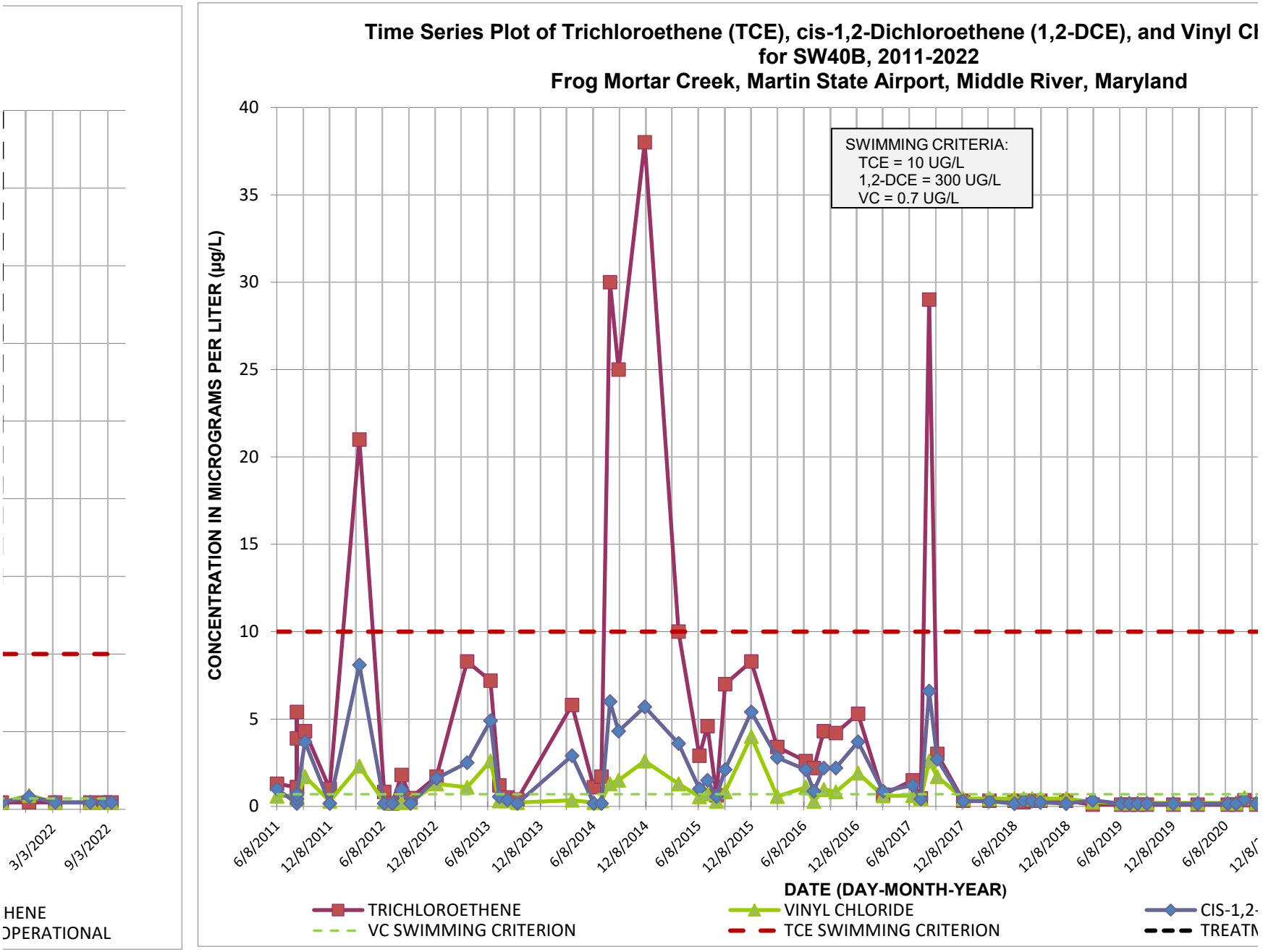
U - analyte not detected; concentration shown is detection limit

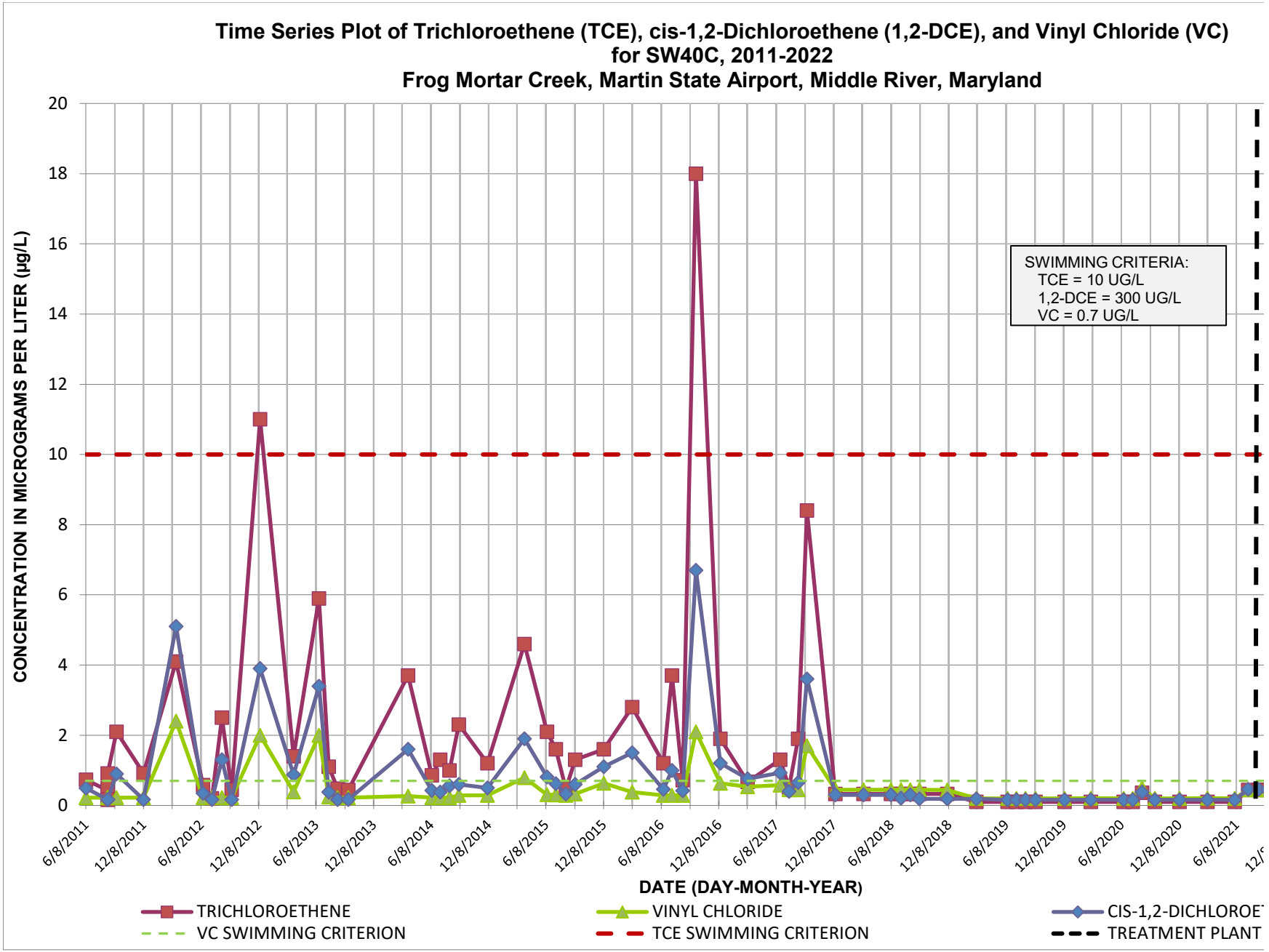
UJ - analyte not detected; reported detection limit is approximate

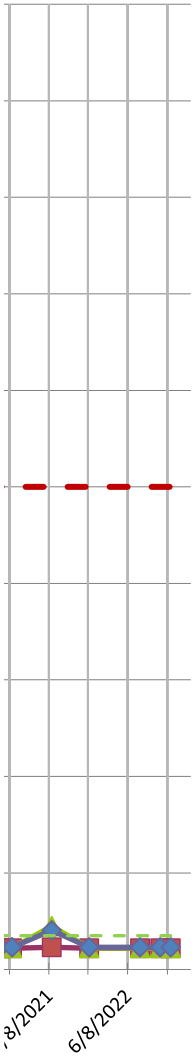
UR - analyte not detected; result is unusable, certain criteria not met

# APPENDIX D—TIME-SERIES PLOTS OF MAJOR VOLATILE ORGANIC COMPOUNDS


Time Series Plot of Trichloroethene (TCE), cis-1,2-Dichloroethene (1,2-DCE), and Vinyl Chloride (VC)
for SW40A, 2011-2022
Frog Mortar Creek, Martin State Airport, Middle River, Maryland
SWIMMING CRITERIA:
TCE = 10 UG/L
1,2-DCE = 300 UG/L
VC = 0.7 UG/L
CONCENTRATION IN MICROGRAMS PER LITER (UG/L)
45
40
35
30
25
20
15
10
5
0
3/3/2011
9/3/2011
3/3/2012
9/3/2012
3/3/2013
9/3/2013
3/3/2014
9/3/2014
3/3/2015
9/3/2015
3/3/2016
9/3/2016
3/3/2017
9/3/2017
3/3/2018
9/3/2018
3/3/2019
9/3/2019
3/3/2020
9/3/2020
3/3/2021
9/3/2021
DATE (DAY-MONTH-YEAR)
TRICHLOROETHENE
VINYL CHLORIDE
CIS-1,2-DICHLOROETH
VC SWIMMING CRITERION
TCE SWIMMING CRITERION
TREATMENT PLANT C


Time Series Plot of Trichloroethene (TCE), cis-1,2-Dichloroethene (1,2-DCE), and Vinyl Cl
for SW40B, 2011-2022
Frog Mortar Creek, Martin State Airport, Middle River, Maryland
SWIMMING CRITERIA:
TCE = 10 UG/L
1,2-DCE = 300 UG/L
VC = 0.7 UG/L
CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
40
35
30
25
20
15
10
5
0
6/8/2011
12/8/2011
6/8/2012
12/8/2012
6/8/2013
12/8/2013
6/8/2014
12/8/2014
6/8/2015
12/8/2015
6/8/2016
12/8/2016
6/8/2017
12/8/2017
6/8/2018
12/8/2018
6/8/2019
12/8/2019
6/8/2020
DATE (DAY-MONTH-YEAR)
TRICHLOROETHENE
VINYL CHLORIDE
CIS-1,2-
VC SWIMMING CRITERION
TCE SWIMMING CRITERION
TREATM
3/3/2022
9/3/2022
HENE
OPERATIONAL


Time Series Plot of Trichloroethene (TCE), cis-1,2-Dichloroethene (1,2-DCE), and Vinyl Chloride (VC)
for SW40C, 2011-2022
Frog Mortar Creek, Martin State Airport, Middle River, Maryland
CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
20
18
16
14
12
10
8
6
4
2
0
SWIMMING CRITERIA:
TCE = 10 UG/L
1,2-DCE = 300 UG/L
VC = 0.7 UG/L
6/8/2011
12/8/2011
6/8/2012
12/8/2012
6/8/2013
12/8/2013
6/8/2014
12/8/2014
6/8/2015
12/8/2015
6/8/2016
12/8/2016
6/8/2017
12/8/2017
6/8/2018
12/8/2018
6/8/2019
12/8/2019
6/8/2020
12/8/2020
6/8/2021
DATE (DAY-MONTH-YEAR)
TRICHLOROETHENE
VINYL CHLORIDE
CIS-1,2-DICHLOROE
VC SWIMMING CRITERION
TCE SWIMMING CRITERION
TREATMENT PLANT




THENE
OPERATIONAL

**Time Series Plot of Trichloroethene (TCE), cis-1,2-Dichloroethene (1,2-DCE), and Vinyl Cl**
**for SW40D, 2012-2022**
**Frog Mortar Creek, Martin State Airport, Middle River, Maryland**

SWIMMING CRITERIA:
TCE = 10 UG/L
1,2-DCE = 300 UG/L
VC = 0.7 UG/L

CONCENTRATION IN MICROGRAMS PER LITER (µg/L)

0
2
4
6
8
10
12

3/20/2012
9/20/2012
3/20/2013
9/20/2013
3/20/2014
9/20/2014
3/20/2015
9/20/2015
3/20/2016
9/20/2016
3/20/2017
9/20/2017
3/20/2018
9/20/2018
3/20/2019
9/20/2019
3/20/2020
9/20/2020

DATE (DAY-MONTH-YEAR)

TRICHLOROETHENE
VINYL CHLORIDE
CIS-1,
VC SWIMMING CRITERION
TCE SWIMMING CRITERION
TREA