Prepared for:

City of Takoma Park
Department of Public Works

Dry Weather Screening, Analysis & Evaluation of Outfalls Report

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1. INTRODUCTION

1.1. Project Description

The City of Takoma Park (City) has coverage under the Maryland Department of the Environment (MDE) National Pollutant Discharge Elimination System (NPDES) General Permit for Small Municipal Separate Storm Sewer System (MS4). The conditions of the permit require the City to develop, implement and enforce a program to detect and eliminate illicit discharges. The City has contracted BayLand Consultants & Designers, Inc. (BayLand) to provide dry weather analysis and outfall evaluation for 78 outfalls in the City of Takoma Park.

The purpose of this project was to provide the City with quantitative data on non-stormwater discharges into Sligo Creek which eventually drains to the Northwest Branch of the Anacostia River, and a qualitative assessment of outfall conditions observed during the 2019 evaluation. BayLand performed dry weather screening for 78 outfalls within the City for illicit discharge and analyzed the surface water samples collected. Outfall screening took place after 72 hours of antecedent dry weather.

Field testing of any outfalls with flow after 72 hours of dry weather included surface water samples collected and measurements of pH, temperature and chlorine. Field testing and water sample collection was conducted on June 24 and 27 of 2019. The collected water samples were then sent to Australian Laboratory Services (ALS) Environmental for analysis of 16 different parameters (Table 1 – Conductivity through Total Phosphorus).

1.2. Study Area Description

Sligo Creek is a perennial tributary of the Northwest Branch of the Anacostia River. The Creek is one of the most urbanized in the Anacostia Watershed (Montgomery County Government, 2019). The Sligo Creek Watershed (USGS 01650800) is approximately 6.45 square miles and contains four major tributaries: Wheaton Branch, Comstock Branch, Takoma Park Branch and Long Branch (USGS, 2019).

The drainage area is a mix of high density commercial and urban residential land uses. The neighborhoods were developed rapidly in the 1950s and 1960s, before modern environmental standards were put into place, which has led to degraded water quality in receiving streams. Montgomery County has begun installing several stormwater management (SWM) and stream restoration projects in the watershed to help improve water quality (George, 2012). Over the last few years, the City has installed SWM facilities and has several bioretention facilities, a modular wetland and a stream restoration project targeted for completion in 2019 (Takoma Park, 2019).

1.3. Stormwater Regulatory Requirements

The U.S. Environmental Protection Agency's (EPA) stormwater regulations define "illicit discharge" as "any discharge to municipal separate storm sewer that is not composed entirely of stormwater" (except for discharges from firefighting activities and a few other categories). Municipalities operating under a Phase II MS4 permit must develop and implement a plan to detect and address non-stormwater discharges. Sources of illicit discharges include, but are not limited to, sanitary wastewater, effluent from septic tanks, car wash wastewaters, improper oil disposal, radiator flushing disposal, laundry wastewater, spills from roadway accidents, and improper disposal of auto and household toxics. EPA guidance recommends that the plan to detect and address illicit discharges include the following four components:

1. Locate Problem Areas – Procedures for locating priority areas likely to have illicit discharges.
2. Find the Source – Procedures for tracing the source on an illicit discharge.
3. Remove/Correct Illicit Connections – Procedures for removing the source of the discharge.
4. Document Actions Taken – Procedures for program evaluation and assessment.

The EPA recommends visually screening outfalls during dry weather and conducting field tests of selected pollutants as part of the procedures for identifying priority areas.

1.3.1. Federal & State Water Quality Criteria Tables

Water quality criteria can be applied to both the local and national levels. The purpose of assigning water quality criteria a numeric value is for the protection of aquatic life and human health. The freshwater values for water criteria defined by the Code of Maryland Regulations (COMAR) can be found in Table 1.

The EPA sets the standards for the national recommended water quality criteria (Table 2). This table is the most up-to-date criteria for aquatic life ambient water quality criteria. Maryland uses these values as a guide and therefore both sets of criteria are listed and used as a part of this study.

For the purpose of applying Escherichia coli (E. coli) and Enterococci criteria levels, the more stringent Recreational Water Quality Criteria (RWQC) for primary contact were used due to Sligo Creek's easy water access and proximity to multiple parks and bike paths. The EPA defines primary contact as "activities where immersion and ingestion are likely and there is a high degree of bodily contact with the water, such as swimming, bathing, surfing, water skiing, tubing, skin diving, water play by children, or similar water-contact activities."

Table 1 – Maryland Water Criteria Specific to Designated Uses	
Parameter	**Criteria**
pH	6.5 to 8.5
Temperature (F)	Maximum 32°C or ambient temperature, whichever is greater
Conductivity (umhos/cm)	No existing criteria
Turbidity (NTU)	Maximum of 150 NTU and monthly average of 50 NTU
Detergents	No existing criteria
Ammonia	No existing criteria
Boron	No existing criteria
E. coli (MPN/100ml)	235[1]
Enterococci (MPN/100ml)	61[2]
Total Coliform	No existing criteria
Fluoride	No existing criteria
Hardness	No existing criteria
Potassium	No existing criteria
Chloride	No existing criteria
Chlorine (mg/L)	< 0.10 mg/L
Color	Maximum of 75 units as a monthly average
Total Nitrogen (mg/L)	No existing criteria
Total Phosphorus (mg/L)	No existing criteria

1 and 2: Bacteria Indicator Criteria for Recreational Full Body Contact. Source: COMAR 26.08.02.033 http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=26.08.02.

Table 2 – U.S. EPA Recreational Water Quality Criteria	
Parameter	**Criteria**
pH	6.5 to 9.0
Temperature (F)	Site and species specific
Conductivity (umhos/cm)	No existing criteria
Turbidity (NTU)	Site and species specific
Detergents	No existing criteria
Ammonia	Chronic 1.9[1], Acute 17[1]
Boron	No existing criteria
E. coli (MPN/100ml)	126[2]
Enterococci (MPN/100ml)	35[2]
Total Coliform	No existing criteria
Fluoride	No existing criteria
Hardness	No existing criteria
Potassium	No existing criteria
Chloride	Chronic 230, Acute 860
Chlorine (mg/L)	Chronic 0.011, Acute 0.019
Color	75
Total Nitrogen (mg/L)	No existing criteria
Total Phosphorus (mg/L)	No existing criteria

1: 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia Freshwater (EPA)
2: 2012 Recreational Water Quality Criteria (EPA)
Source: EPA Current Water Quality Criteria http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

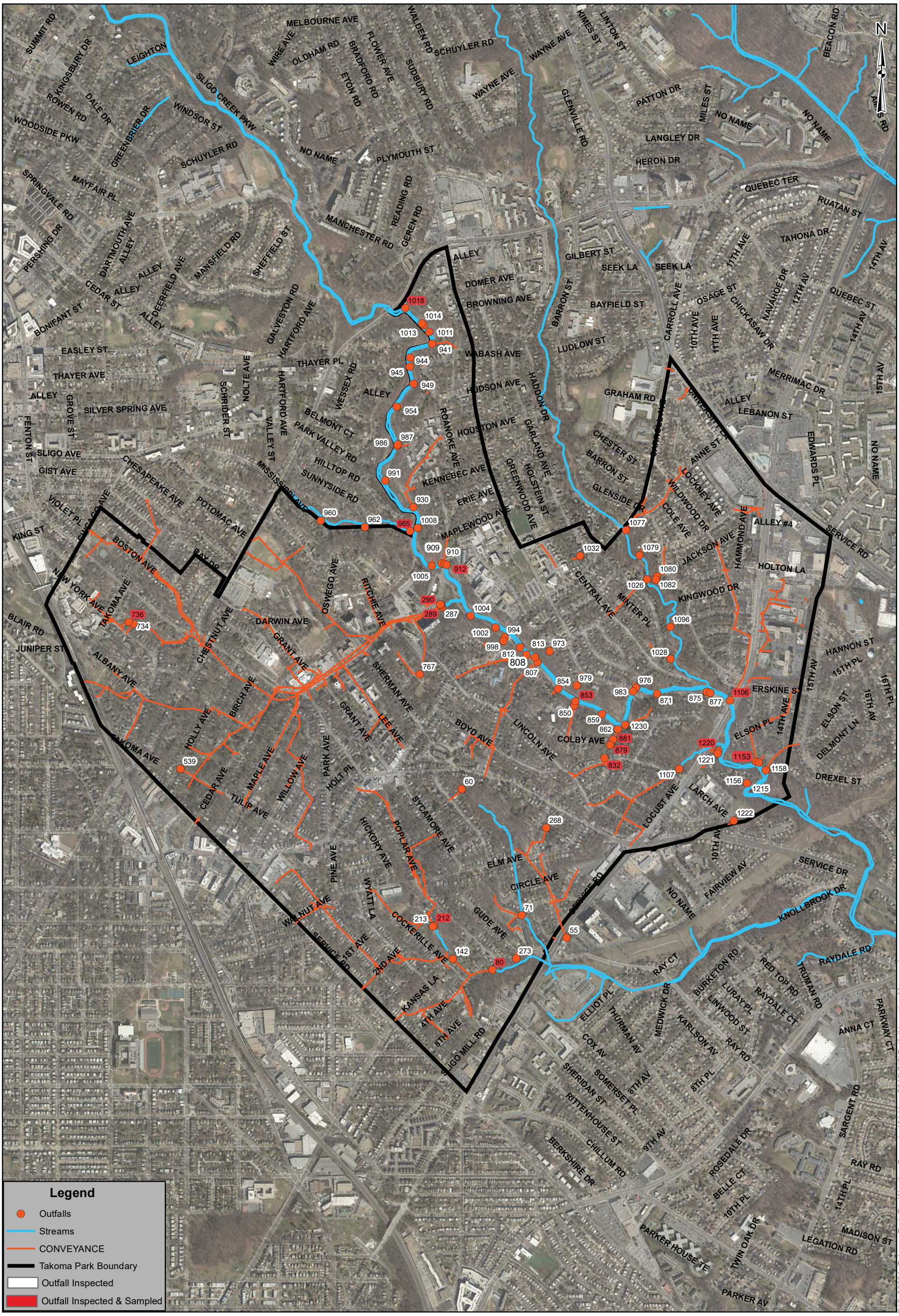
Table 3 – Parameters Measured & Significance	
Parameter	**Significance**
pH	A measure of the hydrogen ion concentration indicating neutrality, acidity, or alkalinity of a solution. Ideal range 6.5 to 8.0.
Water Temperature	Thermal property of ambient water that may affect aquatic organisms. Most sensitive organisms prefer uniformly colder waters.
Specific Conductivity	A measure of the ability of water to conduct an electrical current at 25C. Most streams range from 50 to 1500 umhos/cm, but studies have shown that "freshwater streams ideally should have a conductivity between 150 to 500 umhos/cm to support diverse aquatic life." (Friends of Sligo Creek: Water Quality Parameters).
Turbidity	Turbidity is the measure of the specific portion of light that is deflected by undissolved particles as it passes through water. High levels of total suspended solids (TSS) will increase turbidity and decrease water clarity. EPA recommendations based on reference streams in Ecoregion IX suggest an ideal turbidity criteria of 3.15-13.5 (far lower than the COMAR Standard of 150 NTU). It should be noted that the COMAR Standard states that turbidity may not exceed levels detrimental to aquatic life and the 150 NTU Standard is typically applied to stormwater runoff from construction sites after erosion and sediment control measures.
Detergents (Surfactants)	Presence of surfactants which may be an indicator of washwater or sewage. No current criteria set; however a threshold of 0.50 mg/L has been established by MDE to determine the potential for the presence of an illicit discharge.
Ammonia	A nutrient that can increase algal blooms. Sources include organic decomposition, agricultural and urban runoff, and wastewater effluent. Elevated levels can present acute and chronic toxicity levels to freshwater aquatic organisms.
Boron	Boron is a naturally occurring chemical element essential to plant growth but may be toxic in excessive concentrations. Anthropogenic sources of boron in the freshwater streams include sewage sludge and effluents, atmospheric deposition from coal combustion, cleaning compounds and agricultural chemicals. Recommended guidelines for freshwater aquatic life are 0.67-2.0 mg/L.
Escherichia coli (E. coli)	A species of fecal coliform bacteria that is specific to fecal material from humans and other warm-blooded animals. The EPA recommends E. coli as the best indicator of health risk from water contact in recreational waters. Elevated levels may be an indicator of wastewater migration into a storm drain system. Threshold limits are based on water use and contact.
Enterococci	A subgroup of fecal streptococcus bacteria that are human-specific and used as a best indicator of health risk in saltwater because of their ability to survive, and as a useful indicator in freshwater too. Elevated levels may be an indicator of wastewater migration into a storm drain system. Threshold limits are based on water use and contact.
Total Coliform	A group of naturally occurring bacteria that are present in human feces, animal waste, soil, and other places in the environment. Not a recommended indicator of health risk in recreational waters due to their abundance in the environment; a more useful indicator of drinking water contamination.
Fluoride	A chemical element added to drinking water in some municipalities to reduce incidence of tooth decay. Elevated levels may be an indicator of potable water migration into a storm drain system.
Hardness	Hardness is a measure of the concentration of calcium and magnesium in water. Some aquatic species are sensitive to the hardness of water. It may be an indicator of sewage, washwater, tap water or industrial liquid waste.
Potassium	A naturally occurring element that can be used as an indicator of sewage and/or industrial waste. Elevated levels of potassium can be toxic to some aquatic species.

Table 3 – Parameters Measured & Significance	
Parameter	**Significance**
Chloride	Chloride ions are naturally occurring and may be present in groundwater baseflow. Large concentrations increase the corrosiveness of water and present acute and chronic toxicity to aquatic organisms. Sources of anthropogenic chlorides include road salt, sewage contamination, and water softener discharges.
Chlorine (Total)	Chlorine is a chemical commonly used as a biocide in drinking water and wastewater treatment, as well as numerous other industrial applications. Excess levels of chlorine can have acute and chronic toxicity on aquatic organisms. It can be used as an indicator of wastewater, and potable water migration into a storm drain system, and/or illicit industrial discharges.
Color	A measure that indicates the amount of photosynthetically active light available to primary producers at lower depths. Color can be used as an indicator of sewage, grey water, and industrial discharges.
Total Nitrogen (TN)	A naturally occurring compound necessary for plant health. Excessive levels can accelerate algal growth, which can lead to depletions of dissolved oxygen in water and decreased light transmission to benthic organisms. Nitrogen is an indicator of sewage, and fertilizer contamination. EPA recommendations based on reference streams in Ecoregion IX suggest an ideal TN criteria of 0.07-1.0 mg/L.
Total Phosphorus (TP)	A naturally occurring compound necessary for plant health. Excessive levels can accelerate algal growth, which can lead to depletions of dissolved oxygen in water and decreased light transmission to benthic organisms. Phosphorus is an indicator of sewage, and fertilizer contamination. EPA recommendations based on reference streams in Ecoregion IX suggest an ideal TP criteria of 0.022-0.10 mg/L.

2. DISTRIBUTION MAP OF INSPECTED & SAMPLED OUTFALLS

Visual inspections of 78 outfalls were conducted throughout the Sligo Creek watershed within the City of Takoma Park following 72 hours of dry weather (Figure 1). Outfall #877 could not be located during the screening process, therefore only 77 were inspected. In 2017, it was noted that this structure was a corrugated plastic pipe at an active construction site. This may have been a temporary outfall as construction is now complete. Structure #Poplar exhibited a dry weather discharge in 2017 but there was no active flow in 2019. BayLand collected surface water samples at 15 outfalls where active flow was observed.

The spatial distribution of the 15 outfalls where dry weather flow was observed did not provide any obvious indicators of problem areas within the site vicinity to focus illicit discharge source identification and elimination efforts. BayLand was not able to identify any illicit discharge sources from the outfall structures which exhibited flow. More advanced methods of tracking illicit discharges are recommended to determine the upstream sources.



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Takoma Park Outfall Location Map
Figure 1

3. SAMPLING RESULTS

There were surface water samples collected at 15 distinct outfall locations where active water flow was observed following 72 hours of antecedent dry weather, including 10 outfalls that were sampled in 2017 and eight in 2015. Structures #736, #879, #881, #912 and #1153 were sampled in 2019 for the first time. Structures #55, #71 and #930 were wet, but did not exhibit any flow coming through the pipe or in the outfall channel. Structures #287, #941, #960, #1107, #1158, #1230 and #Poplar were previously sampled but could not be sampled as there was either no flow or the flow was in the form of a slow trickle and there was not enough sample volume to allow for field or laboratory testing. Outfall testing results are summarized in Tables 4 through 18 and the laboratory data sheets are provided in Appendix A.

3.1. Result Tables of Structures Sampled

Table 4 – Structure #80 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.9	8.0	8.2	7.9	7.8	6.5 to 8.5	6.5 to 9.0
Temperature (C)	16.1	21.1	24.3	21.2	23.5	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	470	610	794	630	648	No existing criteria	No existing criteria
Turbidity (NTU)	6.0	0.3	1.5	0.67	16.4	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	1.6	<0.10	<0.025	0.026	ND	No existing criteria	No existing criteria
Ammonia	<0.2	<0.2	<0.2	<0.2	0.119	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	6.4	<0.05	0.025	0.0272	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	2,100	1,100	488	198.9	>2419.6	235	126[2]
Enterococci (MPN/100ml)	9,300	≥2,400	238	36.8	>2419.6	61	35[2]
Total Coliform	Presence	1,300	>2,420	>2,419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	0.5	<0.2	<0.2	0.21	0.24	No existing criteria	No existing criteria
Hardness	144	120	138	130	110	No existing criteria	No existing criteria
Potassium	3.6	6.1	5.02	4.23	3.9	No existing criteria	No existing criteria
Chloride	63	130	164	150	149	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.71	0.02	0.12	0.07	0.13	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	5	26	17	25	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	2.1	3.6	1.67	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	<0.05	<0.05	ND	No existing criteria	No existing criteria

Table 5 – Structure #212 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.6	7.4	7.5	7.83	7.4	6.5 to 8.5	6.5 to 9.0
Temperature (C)	18.9	20.5	21.5	20.9	21.6	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	440	490	574	570	606	No existing criteria	No existing criteria
Turbidity (NTU)	70	0.7	1.0	0.94	2.45	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.12	<0.10	<0.025	0.028	ND	No existing criteria	No existing criteria
Ammonia	<0.2	<0.2	<0.2	<0.2	0.131	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	5.1	<0.05	0.13	0.0196	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	7,500	650	548	88.4	387	235	126[2]
Enterococci (MPN/100ml)	4,300	1,100	98.4	7.5	1,410	61	35[2]
Total Coliform	Presence	≥2,400	>2,420	>2,419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	0.2	<0.2	<0.2	0.16	ND	No existing criteria	No existing criteria
Hardness	68	95	73.6	85	87	No existing criteria	No existing criteria
Potassium	3.7	4.9	3.26	3.54	3.7	No existing criteria	No existing criteria
Chloride	90	120	139	150	149	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	90	0.02	<0.01	0.06	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	<5	5	9.0	10	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	2.1	4.4	2.03	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	<0.05	<0.05	ND	No existing criteria	No existing criteria

Table 6 – Structure #289 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.4	7.8	8.1	7.68	7.4	6.5 to 8.5	6.5 to 9.0
Temperature (C)	18.3	18.9	21.6	19.6	22.2	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	790	800	789	840	971	No existing criteria	No existing criteria
Turbidity (NTU)	9.2	200	1.9	1.5	8.34	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.27	<0.10	<0.025	<0.02	ND	No existing criteria	No existing criteria
Ammonia	<0.2	0.4	<0.2	<0.2	0.375	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	5.8	0.10	0.035	0.0464	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	930	730	488	107.6	105	235	126[2]
Enterococci (MPN/100ml)	2,300	≥2,400	1,050	517.2	190	61	35[2]
Total Coliform	Presence	1,700	>2,420	>2,419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	0.5	0.3	<0.2	0.21	ND	No existing criteria	No existing criteria
Hardness	244	250	189	210	209	No existing criteria	No existing criteria
Potassium	7.4	9.1	5.92	5.35	8.4	No existing criteria	No existing criteria
Chloride	120	160	156	190	217	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.03	<0.02	0.11	0.01	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	48	18	19	25	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	2.4	3.35	1.4	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	0.26	<0.05	ND	No existing criteria	No existing criteria

Table 7 – Structure #290 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	9.7	No flow	8.1	7.99	7.2	6.5 to 8.5	6.5 to 9.0
Temperature (C)	25	No flow	21.8	19.6	23.3	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	1,500	No flow	716	740	1110	No existing criteria	No existing criteria
Turbidity (NTU)	11	No flow	1.5	2.6	32.6	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.13	No flow	<0.025	<0.02	ND	No existing criteria	No existing criteria
Ammonia	<0.2	No flow	<0.2	<0.2	0.174	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	5.1	No flow	0.037	0.0407	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	4,300	No flow	687	70.8	2420	235	126[2]
Enterococci (MPN/100ml)	7,500	No flow	687	32.7	>2419.6	61	35[2]
Total Coliform	Presence	No flow	>2,420	2,419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	0.4	No flow	<0.2	0.32	ND	No existing criteria	No existing criteria
Hardness	104	No flow	194	200	220	No existing criteria	No existing criteria
Potassium	4.3	No flow	5.87	5.51	10.3	No existing criteria	No existing criteria
Chloride	390	No flow	147	150	230	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	<0.2	No flow	0.11	0.06	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	No flow	24	32	60	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	3	4.99	2.59	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	0.10	<0.05	ND	No existing criteria	No existing criteria

Table 8 – Structure #736 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	Not Tested	Not Tested	Not Tested	Not Tested	7.2	6.5 to 8.5	6.5 to 9.0
Temperature (C)	Not Tested	Not Tested	Not Tested	Not Tested	23.4	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	Not Tested	Not Tested	Not Tested	Not Tested	750	No existing criteria	No existing criteria
Turbidity (NTU)	Not Tested	Not Tested	Not Tested	Not Tested	1.13	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Ammonia	Not Tested	Not Tested	Not Tested	Not Tested	0.162	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	45	235	126[2]
Enterococci (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	921	61	35[2]
Total Coliform	Not Tested	Not Tested	Not Tested	Not Tested	>2419.6	No existing criteria	No existing criteria
Fluoride	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Hardness	Not Tested	Not Tested	Not Tested	Not Tested	189	No existing criteria	No existing criteria
Potassium	Not Tested	Not Tested	Not Tested	Not Tested	4.7	No existing criteria	No existing criteria
Chloride	Not Tested	Not Tested	Not Tested	Not Tested	186	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	Not Tested	Not Tested	Not Tested	Not Tested	5	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria

Table 9 – Structure #832 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.4	7.4	8.0	7.55	7.3	6.5 to 8.5	6.5 to 9.0
Temperature (C)	24.4	22.2	23.8	19.7	23.8	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	620	690	903	510	847	No existing criteria	No existing criteria
Turbidity (NTU)	1.1	11	10.6	74	3.94	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.11	<0.10	<0.025	0.077	ND	No existing criteria	No existing criteria
Ammonia	<0.2	0.8	0.21	<0.20	0.154	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	3.5	<0.05	0.014	0.0284	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	90	1400	>2,420	>2,419.6	152	235	126[2]
Enterococci (MPN/100ml)	2300	≥2,400	>2,420	>2,419.6	1410	61	35[2]
Total Coliform	Presence	≥2,400	>2,420	>2,419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	<0.1	<0.2	<0.2	0.13	ND	No existing criteria	No existing criteria
Hardness	124	200	181	120	129	No existing criteria	No existing criteria
Potassium	4.2	9.9	4.6	3.7	4.4	No existing criteria	No existing criteria
Chloride	110	200	201	84	201	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	<0.02	0.06	0.90	0.02	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	45	16	63	15	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	2.5	4.73	1.1	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	0.12	<0.05	ND	No existing criteria	No existing criteria

Table 10 – Structure #853 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	8.0	8.1	7.6	7.3	7.2	6.5 to 8.5	6.5 to 9.0
Temperature (C)	21.7	22.2	23.5	23.0	22.1	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	410	460	508	470	522	No existing criteria	No existing criteria
Turbidity (NTU)	1.1	1.0	15.6	16	1.16	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.12	<0.10	<0.025	0.07	ND	No existing criteria	No existing criteria
Ammonia	<0.2	<0.2	0.34	0.2	ND	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	4.1	<0.05	0.012	0.0227	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	2300	190	>2420	1119.9	32	235	126[2]
Enterococci (MPN/100ml)	46000	1100	>2420	235.2	38	61	35[2]
Total Coliform	Presence	≥2400	>2420	>2419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	<0.10	<0.2	<0.2	0.3	ND	No existing criteria	No existing criteria
Hardness	100	95	100	130	92.9	No existing criteria	No existing criteria
Potassium	3.7	4.5	3.06	3.42	3.4	No existing criteria	No existing criteria
Chloride	70	92	111	80	134	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.02	0.03	0.03	0.05	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	5	49	<5	5	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	1.2	4.4	2.32	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	0.08	<0.05	ND	No existing criteria	No existing criteria

Table 11 – Structure #879 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	Not Tested	Not Tested	Not Tested	Not Tested	7.6	6.5 to 8.5	6.5 to 9.0
Temperature (C)	Not Tested	Not Tested	Not Tested	Not Tested	23.9	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	Not Tested	Not Tested	Not Tested	Not Tested	751	No existing criteria	No existing criteria
Turbidity (NTU)	Not Tested	Not Tested	Not Tested	Not Tested	0.82	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Ammonia	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	461	235	126[2]
Enterococci (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	>2419.6	61	35[2]
Total Coliform	Not Tested	Not Tested	Not Tested	Not Tested	>2419.6	No existing criteria	No existing criteria
Fluoride	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Hardness	Not Tested	Not Tested	Not Tested	Not Tested	168	No existing criteria	No existing criteria
Potassium	Not Tested	Not Tested	Not Tested	Not Tested	4.7	No existing criteria	No existing criteria
Chloride	Not Tested	Not Tested	Not Tested	Not Tested	170	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	Not Tested	Not Tested	Not Tested	Not Tested	10	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria

Table 12 – Structure #881 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	Not Tested	Not Tested	Not Tested	Not Tested	7.3	6.5 to 8.5	6.5 to 9.0
Temperature (C)	Not Tested	Not Tested	Not Tested	Not Tested	24.3	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	Not Tested	Not Tested	Not Tested	Not Tested	756	No existing criteria	No existing criteria
Turbidity (NTU)	Not Tested	Not Tested	Not Tested	Not Tested	1.24	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Ammonia	Not Tested	Not Tested	Not Tested	Not Tested	0.271	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	248	235	126[2]
Enterococci (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	1550	61	35[2]
Total Coliform	Not Tested	Not Tested	Not Tested	Not Tested	>2419.6	No existing criteria	No existing criteria
Fluoride	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Hardness	Not Tested	Not Tested	Not Tested	Not Tested	173	No existing criteria	No existing criteria
Potassium	Not Tested	Not Tested	Not Tested	Not Tested	5.3	No existing criteria	No existing criteria
Chloride	Not Tested	Not Tested	Not Tested	Not Tested	176	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	Not Tested	Not Tested	Not Tested	Not Tested	10	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria

Table 13 – Structure #912 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	Not Tested	Not Tested	Not Tested	Not Tested	7.58	6.5 to 8.5	6.5 to 9.0
Temperature (C)	Not Tested	Not Tested	Not Tested	Not Tested	25.6	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	Not Tested	Not Tested	Not Tested	Not Tested	1170	No existing criteria	No existing criteria
Turbidity (NTU)	Not Tested	Not Tested	Not Tested	Not Tested	2.19	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Ammonia	Not Tested	Not Tested	Not Tested	Not Tested	0.125	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	Not Tested	Not Tested	Not Tested	Not Tested	0.059	No existing criteria	No existing criteria
E. coli (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	58	235	126[2]
Enterococci (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	>2,419.6	61	35[2]
Total Coliform	Not Tested	Not Tested	Not Tested	Not Tested	>2,419.6	No existing criteria	No existing criteria
Fluoride	Not Tested	Not Tested	Not Tested	Not Tested	1.4	No existing criteria	No existing criteria
Hardness	Not Tested	Not Tested	Not Tested	Not Tested	369	No existing criteria	No existing criteria
Potassium	Not Tested	Not Tested	Not Tested	Not Tested	10.3	No existing criteria	No existing criteria
Chloride	Not Tested	Not Tested	Not Tested	Not Tested	192	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	Not Tested	Not Tested	Not Tested	Not Tested	10	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	5.73	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	0.34	No existing criteria	No existing criteria

Table 14 – Structure #965 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.3	7.9	7.8	7.68	7.19	6.5 to 8.5	6.5 to 9.0
Temperature (C)	21.1	20.5	24.8	19.2	26.2	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	800	790	1,040	990	746	No existing criteria	No existing criteria
Turbidity (NTU)	1.4	1.6	1.1	<0.5	2.58	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.12	<0.10	<0.025	<0.02	ND	No existing criteria	No existing criteria
Ammonia	<0.2	<0.2	<0.2	<0.2	ND	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	4.8	<0.05	0.013	0.0583	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	430	690	411	488.4	613	235	126[2]
Enterococci (MPN/100ml)	930	≥2,400	1,300	980.4	>2,419.6	61	35[2]
Total Coliform	Presence	≥2,400	>2,420	>2,419.6	>2,419.6	No existing criteria	No existing criteria
Fluoride	0.2	<0.2	<0.2	<0.1	ND	No existing criteria	No existing criteria
Hardness	220	230	245	230	162	No existing criteria	No existing criteria
Potassium	6.1	7.0	5.58	5.28	4.7	No existing criteria	No existing criteria
Chloride	160	160	234	240	171	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.09	0.02	0.04	0.02	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	6	8	9.0	10	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	1.6	5.49	1.86	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	<0.05	<0.05	ND	No existing criteria	No existing criteria

Table 15 – Structure #1018 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.4	7.8	7.4	8.11	7.68	6.5 to 8.5	6.5 to 9.0
Temperature (C)	18.3	19.4	26.8	19.3	26.1	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	1,600	1,300	2,320	<10	1890	No existing criteria	No existing criteria
Turbidity (NTU)	1.0	1.4	3.5	0.5	0.33	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.11	<0.10	<0.025	<0.02	ND	No existing criteria	No existing criteria
Ammonia	<0.2	<0.2	<0.2	<0.2	ND	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	5.0	<0.05	0.031	0.038	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	2,300	91	435	62.7	28	235	126[2]
Enterococci (MPN/100ml)	1,500	1,100	1,550	100.8	222	61	35[2]
Total Coliform	Presence	≥2,400	>2,420	>2,419.6	<2,419.6	No existing criteria	No existing criteria
Fluoride	0.1	0.2	<0.2	<0.1	ND	No existing criteria	No existing criteria
Hardness	388	300	495	470	362	No existing criteria	No existing criteria
Potassium	9.6	10	11.2	11.1	9.9	No existing criteria	No existing criteria
Chloride	440	370	614	720	440	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.13	0.02	0.03	0.17	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	<5	<5	35	5	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	1.8	4.66	2.44	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	<0.05	<0.05	ND	No existing criteria	No existing criteria

Table 16 – Structure #1106 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.6	7.4	7.4	7.13	6.8	6.5 to 8.5	6.5 to 9.0
Temperature (C)	25.6	19.4	22.4	24.0	26.1	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	540	780	1,130	1,100	1180	No existing criteria	No existing criteria
Turbidity (NTU)	3.4	7.9	18.9	30	46.0	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.12	<0.10	<0.025	0.086	ND	No existing criteria	No existing criteria
Ammonia	<0.2	0.6	0.47	0.48	0.591	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	6.3	<0.05	0.021	0.0225	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	230	33	4.1	191.8	5	235	126[2]
Enterococci (MPN/100ml)	1,500	43	7.4	2.0	133	61	35[2]
Total Coliform	Presence	≥2,400	>2,420	>2,419.6	>2419.6	No existing criteria	No existing criteria
Fluoride	1.0	0.3	<0.2	0.15	ND	No existing criteria	No existing criteria
Hardness	136	130	177	200	179	No existing criteria	No existing criteria
Potassium	5.2	7.2	6.24	6.170	5.8	No existing criteria	No existing criteria
Chloride	85	210	290	330	387	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.02	0.03	0.05	0.16	0.13	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	<5	57	183	250	100	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	2.1	3.3	2.16	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	0.10	<0.05	ND	No existing criteria	No existing criteria

Table 17 – Structure #1153 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	Not Tested	Not Tested	Not Tested	Not Tested	7.0	6.5 to 8.5	6.5 to 9.0
Temperature (C)	Not Tested	Not Tested	Not Tested	Not Tested	23.3	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	Not Tested	Not Tested	Not Tested	Not Tested	129	No existing criteria	No existing criteria
Turbidity (NTU)	Not Tested	Not Tested	Not Tested	Not Tested	2.76	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Ammonia	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	548	235	126[2]
Enterococci (MPN/100ml)	Not Tested	Not Tested	Not Tested	Not Tested	>2419.6	61	35[2]
Total Coliform	Not Tested	Not Tested	Not Tested	Not Tested	>2419.6	No existing criteria	No existing criteria
Fluoride	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria
Hardness	Not Tested	Not Tested	Not Tested	Not Tested	115	No existing criteria	No existing criteria
Potassium	Not Tested	Not Tested	Not Tested	Not Tested	4.1	No existing criteria	No existing criteria
Chloride	Not Tested	Not Tested	Not Tested	Not Tested	186	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	0.16	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	Not Tested	Not Tested	Not Tested	Not Tested	15	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	3.03	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	Not Tested	Not Tested	ND	No existing criteria	No existing criteria

Table 18 – Structure #1220 Results							
Parameter	**2007 Result**	**2010 Result**	**2015 Result**	**2017 Result**	**2019 Result**	**Maryland COMAR Standard**	**EPA Standard**
pH	7.3	7.9	8.0	7.94	7.1	6.5 to 8.5	6.5 to 9.0
Temperature (C)	16.7	18.9	22.1	18.6	24.3	Maximum 32°C or ambient temperature, whichever is greater	Site and species specific
Conductivity (umhos/cm)	720	910	1,200	900	716	No existing criteria	No existing criteria
Turbidity (NTU)	28	36	5.3	1.0	1.66	Maximum of 150 NTU and monthly average of 50 NTU	Site and species specific
Detergents	0.18	<0.10	<0.025	0.022	ND	No existing criteria	No existing criteria
Ammonia	0.6	1.7	1.35	<0.2	0.929	No existing criteria	Chronic 1.9[1], Acute 17[1]
Boron	7.4	<0.05	0.025	0.0242	ND	No existing criteria	No existing criteria
E. coli (MPN/100ml)	30	69	206	547.6	613	235	126[2]
Enterococci (MPN/100ml)	7,500	23	326	54.5	488	61	35[2]
Total Coliform	Presence	≥2,400	>2,420	>2,416.9	>2419.6	No existing criteria	No existing criteria
Fluoride	0.3	<0.2	<0.2	0.12	ND	No existing criteria	No existing criteria
Hardness	192	230	162	210	164	No existing criteria	No existing criteria
Potassium	6.0	8.6	4.75	4.65	5.7	No existing criteria	No existing criteria
Chloride	120	240	265	220	165	No existing criteria	Chronic 230, Acute 860
Chlorine (mg/L)	0.09	0.02	0.1	0.0	ND	< 0.10 mg/L	Chronic 0.011, Acute 0.019
Color	50	60	59	19	20	Maximum of 75 units as a monthly average	75
Total Nitrogen (mg/L)	Not Tested	Not Tested	1.8	2.64	1.95	No existing criteria	No existing criteria
Total Phosphorus (mg/L)	Not Tested	Not Tested	<0.05	<0.05	ND	No existing criteria	No existing criteria

3.2. Evaluation of Results

E. coli and Enterococci display consistent results at each outfall with levels exceeding either or both the Maryland COMAR standards and EPA standards. This has been a trend since 2010, however 2019 seems to be the most substantial in terms of the number of outfalls exceeding the water quality criteria standards. Chlorine and Chloride exceeded the EPA standards at a few outfalls but was less prominent than in the previous years of sampling. Color continues to exceed Maryland and EPA standards at Outfall #1106 by displaying heavy orange staining in both the pipe and outfall channel.

Table 19 – Evaluation of Field and Laboratory Test Results (2019)		
Structure # Flow Type	**Exceedance Parameters**	**Conclusions**
#80 Substantial	E. coli Enterococci Chlorine	Results continue to suggest possible sanitary wastewater contamination or septic migration into storm drain system. E. coli and enterococci levels are above 2010, 2015 and 2017 sample results and continue to exceed EPA standards. Chlorine concentration is at its highest since 2007.
#212 Moderate	E. coli Enterococci	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. E. coli and enterococci have increased since 2017 and exceed Maryland and EPA standards.
#289 Substantial	Enterococci	Results continue to suggest possible sanitary wastewater contamination or septic migration into storm drain system. Enterococci continues to decrease but still exceeds Maryland and EPA standards.
#290 Substantial	E. coli Enterococci	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. E. coli and enterococci are at its highest since 2007. Chloride matches the chronic toxicity standard but does not exceed it.
#736 Trickle	Enterococci	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. #736 was not tested in the past but Enterococci levels exceed Maryland and EPA standards.
#832 Trickle	E. coli Enterococci	Results continue to suggest possible sanitary wastewater contamination or septic migration into storm drain system. E. coli and enterococci are their lowest since 2007 but continue to exceed Maryland and EPA standards. Chlorine and Turbidity are now within Maryland and EPA standards.
#853 Moderate	Enterococci	Results continue to suggest possible sanitary wastewater contamination or septic migration into storm drain system. E. coli is now within standards and enterococci only exceeds EPA standards.
#879 Trickle	E. coli Enterococci	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. #879 was not tested in the past but E. coli and Enterococci levels exceed Maryland and EPA standards.
#881 Trickle	E. coli Enterococci	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. #881 was not tested in the past but E. coli and Enterococci levels exceed Maryland and EPA standards.
#912 Trickle	Enterococci	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. #912 was not tested in the past but Enterococci levels exceed Maryland and EPA standards.
#965 Substantial	E. coli Enterococci	Results continue to suggest possible sanitary wastewater contamination or septic migration into storm drain system. Both E. Coli and enterococci increased from 2015 and 2017. Both Chloride and Chlorine are within Maryland and EPA standards.
#1018 Moderate	Enterococci Chloride	Results continue to suggest possible sanitary wastewater contamination or septic migration into storm drain system. Enterococci levels have increased from 2017 but is lower than all previous years. Chloride has decreased since 2017 but still exceeds the EPA chronic toxicity standard.
#1106 Substantial	Enterococci Chloride Chlorine Color	Results continue to suggest possible sanitary wastewater contamination and possible landscape water irrigation source or natural water migration into storm drain system. Conductivity has steadily increased from 2007 to 2019. Color is slightly above Maryland and EPA standards; orange staining was observed at outfall. E. coli levels are well below Maryland and EPA standards. Chloride levels have increased from 2017 and remain above the EPA chronic standard. Chlorine exceeds EPA chronic and acute toxicity standards.
#1153 Trickle	E. coli Enterococci Chlorine	Results suggest possible sanitary wastewater contamination or septic migration into storm drain system. Chlorine levels exceed EPA chronic and acute standards. #1153 was not tested in the past.
#1220 Moderate	E. coli Enterococci	Results continue to indicate possible sanitary wastewater contamination or septic migration into storm drain system. E. coli has increased from previous sampling events and is in exceedance of Maryland and EPA standards. Enterococci is at its highest level since 2007.

3.3. Photo Documentation of Sampled Outfalls

Photo 1 –Structure #80

Photo 2 – Structure #212

Photo 3 – Structure #289

Photo 4 – Structure #290

Photo 5 – Structure #736

Photo 6 – Structure #832

Photo 7 – Structure #853

Photo 8 – Structure #879

Photo 9 – Structure #881

Photo 10 – Structure #912

Photo 11 – Structure #965

Photo 12 – Structure #1018

Photo 13 – Structure #1106

Photo 14 – Structure #1153

Photo 15 – Structure #1220

4. OUTFALL STABILITY

All 77 outfalls were investigated for key stability parameters while water quality sampling was being conducted. These parameters included bank erosion, deposition, condition of the outfall pipe and the condition of the outfall channel. As a result, 16 sites were identified as in need of retrofit and/or emergency repairs.

4.1. Photo Documentation of Select Outfalls

Photo 16 – Structure #55: Failing concrete apron with minor undermining and bank erosion downstream

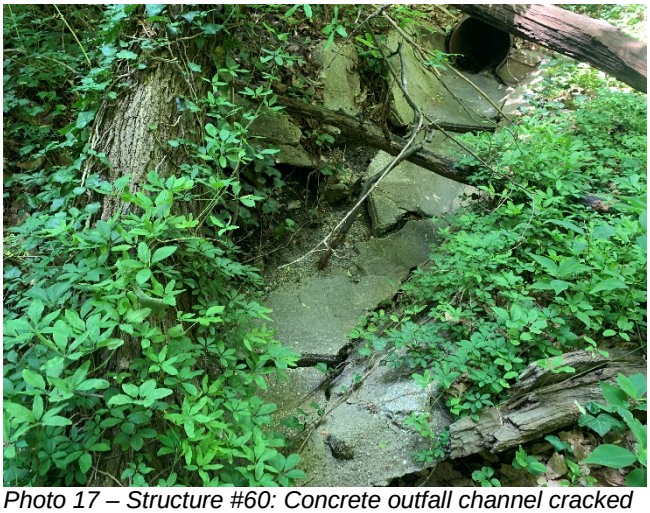

Photo 17 – Structure #60: Concrete outfall channel cracked and failing

Photo 18 – Structure #71: Outfall 50% blocked with sediment

Photo 19 – Structure #212 – Bottom outfall has failed

Photo 20 – Structure #289 & #290: End of concrete apron cracked and undermined, creating a scour pool and left wingwall is severely cracked

Photo 21 – Structure #941: Exposed sewer line downstream

Photo 22 – Structure #960: Headcut and erosion along outfall channel

Photo 23 – Structure #962: End of concrete/asphalt channel has failed and undermining with high bank erosion downstream

Photo 24 – Structure #979: Partially obstructed by concrete and debris

Photo 25 – Structure #983: Base is eroded and wingwall is cracked

Photo 26 – Structure #986: Outfall overgrown with vegetation

Photo 27 – Structure #991: 90% of outfall full of sediment

Photo 28 – Structure #1005: Outfall 75% full of sediment

Photo 29 – Structure #1028: End of concrete channel undermined, more than a 2 foot drop to receiving channel

Photo 30 – Structure #1079: Concrete and debris blocking outfall and erosion along the right side of the headwall

Photo 31 – Structure #1080: Riprap partially obstructing flow

4.2. Evaluation of Outfall Stability

Outfalls were chosen for potential retrofit or emergency repairs due to one or more of the following: excessive bank erosion, sediment deposition, the poor condition of the outfall pipe and/or the poor the condition of the outfall channel.

Most of the issues at these 16 sites were either deterioration of the outfall pipe or the outfall channel. These sites require further investigation to assess the total magnitude of deterioration and potential for outfall retrofit or emergency repair. Total Maximum Daily Load (TMDL) TMDL and MS4 water quality credits can also be calculated during this evaluation. The potential projects would provide stable outfalls, stable outfall channels, minimize impact to adjacent private properties and existing forests, and maximize water quality and ecological uplift.

5. RECOMMENDATIONS

BayLand was unable to locate or identify illicit discharge sources upstream of the outfalls which exhibited dry weather flow during the limited field investigation. Further stormwater drainage system studies and analyses are recommended to determine the upstream illicit discharge sources.

The 15 structures sampled all had elevated levels of E. coli and/or Enterococci. E. coli and Enterococci are indicators of fecal material contamination for illicit discharge detection. BayLand recommends a trunk investigation in which we will progressively work up the trunk from the outfalls and field test manholes along the way. Field tests can be sent to the lab or test kits can be purchased and conducted in the field. Upstream flow tracing and mapping of sanitary sewer lines in relation to stormwater lines is also recommended to determine if exfiltration pathways are the source of elevated E. coli and Enterococci levels. If the upstream source remains unidentified, closed-circuit television (CCTV) pipe inspection services are recommended and can be accessed at the outfalls, manholes, inlets or other underground structures. This will allow us to see the condition of the pipes and determine if exfiltration is occurring. In-stream monitoring at points upstream and downstream of recreational areas can also be done to determine possible health risks to the public, if any, and to determine priority areas for illicit discharge elimination.

Structures #80, #1106 and #1153 displayed chlorine levels which were above the EPA chronic and acute toxicity standards and above the Maryland COMAR Standard. Chlorine can be used as an indicator of wastewater, potable water migration into a storm drain system, and/or illicit industrial discharges. Chlorine test kits are relatively affordable and sampling can be conducted quickly and efficiently. BayLand also recommends sampling surface water downstream of the outfalls to determine ambient chlorine levels in the receiving stream.

Structure #1018 displayed Chloride levels above the EPA chronic toxicity standard and Structure #1106 displayed both Chloride and Color levels above the EPA standard. If the trunk investigation at Structure #1106 fails to return an identified illicit discharge BayLand recommends dye testing or video inspection of the upstream storm drain network from the outfall.

We also recommend conducting a detailed outfall assessment for the 16 unstable outfall sites. The outfalls can be investigated and assessed for all visual signs of water quality and structural impairments, existing vegetation, bank and bed erosion, and downstream channel instability. We would then rank the unstable outfalls according to the severity of instabilities, constructability, property ownership and potential for maximum MS4 and TMDL credit. BayLand can also provide design objectives and a concept level construction cost estimate. All this data would then be summarized and include a brief narrative of the outfall assessment methodology and restoration prioritization.

6. CONCLUSION

The Sligo Creek Watershed has been significantly influenced by commercial and residential land uses, particularly relating to the stormwater system within Takoma Park. Takoma Park was rapidly developed roughly 70 years ago and therefore some of the storm drain infrastructure is in poor condition. Water sampling results continue to indicate possible sanitary wastewater contamination or septic migration into storm drain system. Chlorine was prevalent in previous sampling years, however it exceeded EPA Standards at only three outfalls in 2019. Chloride was above EPA standards at two outfalls and Color exceeded the standards at one outfall.

Tracking and finding the illicit discharges will reduce toxic pollutants which are threatening to aquatic life and human health. Implementing outfall retrofits and emergency repairs will protect public infrastructure, reduce channel erosion and erosion threatening infrastructure, protect adjacent lands, improve and enhance riparian buffer, and reduce pollutants to receiving bodies of water.

Outfall screening and evaluation for 2020 will follow the same methodologies used in 2019, be conducted around the same time of year and results will be compared to previous years of sampling.

7. REFERENCES

Environmental Consultants and Contractors. 2017. *Dry Weather Water Analysis & Outfall Evaluation Report*. Chantilly, VA.

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MDE. 2014. *Title 26 Department of the Environment, Subtitle 08 Water Pollution, Chapter 02 Water Quality*. http://www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-2.htm.

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Takoma Park Government. 2019. *Stormwater Management Projects*. https://takomaparkmd.gov/initiatives/project-directory/stormwater-management-projects.

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APPENDIX A

Laboratory Data Sheets

8-32601.1

ALS Environmental

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July 16, 2019

Mr. Zachary Tate
BayLands Consultants & Designers, Inc.
7455 New Ridge Rd. Suite T
Hanover, MD 21076

Certificate of Analysis

Project Name:	**2019-MS4 TESTING - MD SITE**	Workorder:	**3041618**
Purchase Order:		Workorder ID:	**Tacoma Park Dry Weather Screen**

Dear Mr. Tate:

Enclosed are the analytical results for samples received by the laboratory on Monday, June 24, 2019.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Shannon Butler (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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

CC: Mr. Bill Heckert

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

Shannon Butler
Ms. Shannon Butler
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3041618001	212	Water	6/24/2019 09:30	6/24/2019 23:30	Collected by Client
3041618002	80	Water	6/24/2019 10:10	6/24/2019 23:30	Collected by Client
3041618003	1018	Water	6/24/2019 13:00	6/24/2019 23:30	Collected by Client
3041618004	965	Water	6/24/2019 14:20	6/24/2019 23:30	Collected by Client
3041618005	912	Water	6/24/2019 15:30	6/24/2019 23:30	Collected by Client

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SAMPLE SUMMARY

Workorder: 3041618 Tacoma Park Dry Weather Screen

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 3041618 Tacoma Park Dry Weather Screen

Sample Comments

Lab ID: 3041618001 **Sample ID:** 212 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3041618002 **Sample ID:** 80 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3041618003 **Sample ID:** 1018 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3041618004 **Sample ID:** 965 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3041618005 **Sample ID:** 912 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

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ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID: **3041618001** Date Collected: 6/24/2019 09:30 Matrix: Water
Sample ID: **212** Date Received: 6/24/2019 23:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.131		mg/L	0.100	D6919-09			6/29/19 18:48	AK	C
Chloride	149		mg/L	2.0	EPA 300.0			6/25/19 08:28	MBW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/25/19 05:14	R2B	A
Color, Apparent	10	2	CU	5	SM2120B-2011			6/25/19 03:30	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/25/19 08:28	MBW	A
Nitrate/Nitrite-N	2.03		mg/L	1.00	EPA 353.2			7/11/19 07:57	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	6/27/19 07:22	JXB	7/2/19 10:32	JXB	C
Specific Conductance	606		umhos/cm	1	SM2510B-2011			7/2/19 05:32	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/26/19 04:00	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	7/1/19 03:00	II	7/1/19 20:40	C_W	C
Total Nitrogen	2.03		mg/L	1.10	Calculation			7/16/19 21:46	JWB	C
Turbidity	2.45		NTU	0.10	SM2130B-2011			6/25/19 09:30	R2B	A
METALS										
Hardness	87.0		mg/L	0.33	EPA 200.7	6/27/19 09:30	AHI	7/1/19 18:34	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	6/27/19 09:30	AHI	7/1/19 18:34	MNP	D1
Potassium, Total	3.7		mg/L	0.25	EPA 200.7	6/27/19 09:30	AHI	7/1/19 18:34	MNP	D1
MICROBIOLOGY										
E. Coli	387	4	MPN/100mL	1	S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Total Coliform	>2419.6	5	col/100mL		S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Performed in Columbia MD Lab										
Enterococcus	1410	6	MPN/100mL	1	Enterolert	6/24/19 18:26	DJS	6/25/19 18:30	JCW	F

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ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID: **3041618002** Date Collected: 6/24/2019 10:10 Matrix: Water

Sample ID: **80** Date Received: 6/24/2019 23:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Ammonia-N	0.119		mg/L	0.100	D6919-09			6/29/19 19:03	AK	C
Chloride	149		mg/L	2.0	EPA 300.0			6/25/19 09:57	MBW	A
Chlorine, Total Residual	0.13	1	mg/L	0.10	SM4500-Cl G-2011			6/25/19 05:14	R2B	A
Color, Apparent	25	2	CU	5	SM2120B-2011			6/25/19 03:30	R2B	A
Fluoride	0.24		mg/L	0.20	EPA 300.0			6/25/19 09:57	MBW	A
Nitrate/Nitrite-N	1.67		mg/L	1.00	EPA 353.2			7/11/19 07:58	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	6/27/19 09:44	JXB	7/1/19 11:21	AK	C
Specific Conductance	648		umhos/cm	1	SM2510B-2011			7/2/19 05:34	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/26/19 04:00	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	6/28/19 03:00	II	6/28/19 19:58	C_W	C
Total Nitrogen	1.67		mg/L	1.10	Calculation			7/16/19 21:47	JWB	C
Turbidity	16.4		NTU	0.10	SM2130B-2011			6/25/19 09:30	R2B	A
METALS										
Hardness	110		mg/L	0.66	EPA 200.7	6/27/19 09:30	AHI	7/1/19 21:33	MNP	D1
Boron, Total	ND		mg/L	0.10	EPA 200.7	6/27/19 09:30	AHI	7/1/19 21:33	MNP	D1
Potassium, Total	3.9		mg/L	0.50	EPA 200.7	6/27/19 09:30	AHI	7/1/19 21:33	MNP	D1
MICROBIOLOGY										
E. Coli	>2419.6	4	MPN/100mL	1	S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Total Coliform	>2419.6	5	col/100mL		S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Performed in Columbia MD Lab										
Enterococcus	>2419.6	6	MPN/100mL	1	Enterolert	6/24/19 18:26	DJS	6/25/19 18:30	JCW	F

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ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID: **3041618003** Date Collected: 6/24/2019 13:00 Matrix: Water
Sample ID: **1018** Date Received: 6/24/2019 23:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Ammonia-N	ND		mg/L	0.100	D6919-09			7/1/19 20:56	AK	C
Chloride	440		mg/L	10.0	EPA 300.0			6/26/19 14:44	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/25/19 05:14	R2B	A
Color, Apparent	5	2	CU	5	SM2120B-2011			6/25/19 03:30	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/25/19 10:12	MBW	A
Nitrate/Nitrite-N	2.44		mg/L	1.00	EPA 353.2			7/11/19 07:59	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/9/19 19:55	RXB	7/10/19 15:46	RXB	C
Specific Conductance	1890		umhos/cm	1	SM2510B-2011			7/2/19 05:36	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/26/19 04:00	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	6/28/19 03:00	II	6/28/19 19:37	C_W	C
Total Nitrogen	2.44		mg/L	1.10	Calculation			7/16/19 21:47	JWB	C
Turbidity	0.33		NTU	0.10	SM2130B-2011			6/25/19 09:30	R2B	A
METALS										
Hardness	362		mg/L	0.33	EPA 200.7	6/28/19 10:00	SXC	7/2/19 17:29	SRT	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	6/28/19 10:00	SXC	7/2/19 17:29	SRT	D1
Potassium, Total	9.9		mg/L	0.25	EPA 200.7	6/28/19 10:00	SXC	7/2/19 17:29	SRT	D1
MICROBIOLOGY										
E. Coli	28	4	MPN/100mL	1	S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Total Coliform	>2419.6	5	col/100mL		S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Performed in Columbia MD Lab										
Enterococcus	222		MPN/100mL	1	Enterolert	6/24/19 18:26	DJS	6/25/19 18:30	JCW	F

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ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID: **3041618004** Date Collected: 6/24/2019 14:20 Matrix: Water

Sample ID: **965** Date Received: 6/24/2019 23:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
WET CHEMISTRY										
Ammonia-N	ND		mg/L	0.100	D6919-09			6/29/19 07:20	AK	C
Chloride	171		mg/L	2.0	EPA 300.0			6/25/19 10:27	MBW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/25/19 05:14	R2B	A
Color, Apparent	10	2	CU	5	SM2120B-2011			6/25/19 03:30	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/25/19 10:27	MBW	A
Nitrate/Nitrite-N	1.86		mg/L	0.20	EPA 353.2			7/11/19 12:44	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	6/27/19 07:22	JXB	7/2/19 10:32	JXB	C
Specific Conductance	746		umhos/cm	1	SM2510B-2011			7/2/19 05:37	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/26/19 04:00	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	6/28/19 03:00	II	6/28/19 19:42	C_W	C
Total Nitrogen	1.86		mg/L	1.20	Calculation			7/16/19 21:48	JWB	C
Turbidity	2.58		NTU	0.10	SM2130B-2011			6/25/19 09:30	R2B	A
METALS										
Hardness	162		mg/L	0.33	EPA 200.7	6/27/19 09:30	AHI	7/1/19 19:00	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	6/27/19 09:30	AHI	7/1/19 19:00	MNP	D1
Potassium, Total	4.7		mg/L	0.25	EPA 200.7	6/27/19 09:30	AHI	7/1/19 19:00	MNP	D1
MICROBIOLOGY										
E. Coli	613	4	MPN/100mL	1	S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Total Coliform	>2419.6	5	col/100mL		S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Performed in Columbia MD Lab										
Enterococcus	>2419.6		MPN/100mL	1	Enterolert	6/24/19 18:26	DJS	6/25/19 18:30	JCW	F

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ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID: **3041618005** Date Collected: 6/24/2019 15:30 Matrix: Water

Sample ID: **912** Date Received: 6/24/2019 23:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.125		mg/L	0.100	D6919-09			6/29/19 18:18	AK	C
Chloride	192		mg/L	2.0	EPA 300.0			6/25/19 10:42	MBW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/25/19 05:14	R2B	A
Color, Apparent	10	2	CU	5	SM2120B-2011			6/25/19 03:30	R2B	A
Fluoride	1.4		mg/L	0.20	EPA 300.0			6/25/19 10:42	MBW	A
Nitrate/Nitrite-N	5.73		mg/L	1.00	EPA 353.2			7/11/19 08:01	C_D	C
Phosphorus, Total	0.34		mg/L	0.10	EPA 365.1	6/27/19 07:22	JXB	7/2/19 10:32	JXB	C
Specific Conductance	1170		umhos/cm	1	SM2510B-2011			7/2/19 05:57	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/26/19 04:00	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	6/28/19 03:00	II	6/28/19 19:53	C_W	C
Total Nitrogen	5.73		mg/L	2.00	Calculation			7/16/19 21:48	JWB	C
Turbidity	2.19		NTU	0.10	SM2130B-2011			6/25/19 09:30	R2B	A
METALS										
Hardness	369		mg/L	0.33	EPA 200.7	6/27/19 09:30	AHI	7/1/19 18:57	MNP	D1
Boron, Total	0.059		mg/L	0.050	EPA 200.7	6/27/19 09:30	AHI	7/1/19 18:57	MNP	D1
Potassium, Total	10.3		mg/L	0.25	EPA 200.7	6/27/19 09:30	AHI	7/1/19 18:57	MNP	D1
MICROBIOLOGY										
E. Coli	58	4	MPN/100mL	1	S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Total Coliform	>2419.6	5	col/100mL		S9223B-04	6/25/19 11:25	TDB	6/26/19 12:48	TDB	E
Performed in Columbia MD Lab										
Enterococcus	>2419.6		MPN/100mL	1	Enterolert	6/24/19 18:26	DJS	6/25/19 18:30	JCW	F

Shannon Butler

Ms. Shannon Butler
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3041618001	1	212	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3041618001	2	212	SM2120B-2011	Color, Apparent
The color analysis was performed on a sample aliquot with a pH of 6.679.				
3041618001	3	212	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3041618001	4	212	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3041618001	5	212	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3041618001	6	212	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				
3041618002	1	80	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3041618002	2	80	SM2120B-2011	Color, Apparent
The color analysis was performed on a sample aliquot with a pH of 7.523.				
3041618002	3	80	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3041618002	4	80	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3041618002	5	80	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3041618002	6	80	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				
3041618003	1	1018	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3041618003	2	1018	SM2120B-2011	Color, Apparent
The color analysis was performed on a sample aliquot with a pH of 7.784.				
3041618003	3	1018	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3041618003	4	1018	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3041618003	5	1018	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3041618004	1	965	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				

ANALYTICAL RESULTS

Workorder: 3041618 Tacoma Park Dry Weather Screen

3041618004	2	965	SM2120B-2011	Color, Apparent
The color analysis was performed on a sample aliquot with a pH of 7.480.				
3041618004	3	965	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3041618004	4	965	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3041618004	5	965	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3041618005	1	912	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3041618005	2	912	SM2120B-2011	Color, Apparent
The color analysis was performed on a sample aliquot with a pH of 7.719.				
3041618005	3	912	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3041618005	4	912	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3041618005	5	912	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID	Sample ID	Analysis Method	Prep Method
3041618001	212	Calculation	
3041618001	212	D6919-09	
3041618001	212	EPA 200.7	EPA TRMD
3041618001	212	EPA 300.0	
3041618001	212	EPA 353.2	
3041618001	212	EPA 365.1	EPA 365.1
3041618001	212	Enterolert	Enterolert
3041618001	212	S4500NH3G-11	S4500NH3G-11
3041618001	212	S9223B-04	S9223B-04
3041618001	212	SM2120B-2011	
3041618001	212	SM2130B-2011	
3041618001	212	SM2510B-2011	
3041618001	212	SM4500-Cl G-2011	
3041618001	212	SM5540C-2011	
3041618002	80	Calculation	
3041618002	80	D6919-09	
3041618002	80	EPA 200.7	EPA TRMD
3041618002	80	EPA 300.0	
3041618002	80	EPA 353.2	
3041618002	80	EPA 365.1	EPA 365.1
3041618002	80	Enterolert	Enterolert
3041618002	80	S4500NH3G-11	S4500NH3G-11
3041618002	80	S9223B-04	S9223B-04
3041618002	80	SM2120B-2011	
3041618002	80	SM2130B-2011	
3041618002	80	SM2510B-2011	
3041618002	80	SM4500-Cl G-2011	
3041618002	80	SM5540C-2011	
3041618003	1018	Calculation	
3041618003	1018	D6919-09	
3041618003	1018	EPA 200.7	EPA TRMD
3041618003	1018	EPA 300.0	
3041618003	1018	EPA 353.2	
3041618003	1018	EPA 365.1	EPA 365.1
3041618003	1018	Enterolert	Enterolert
3041618003	1018	S4500NH3G-11	S4500NH3G-11
3041618003	1018	S9223B-04	S9223B-04
3041618003	1018	SM2120B-2011	
3041618003	1018	SM2130B-2011	
3041618003	1018	SM2510B-2011	
3041618003	1018	SM4500-Cl G-2011	
3041618003	1018	SM5540C-2011	
3041618004	965	Calculation	
3041618004	965	D6919-09	
3041618004	965	EPA 200.7	EPA TRMD
3041618004	965	EPA 300.0	

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3041618 Tacoma Park Dry Weather Screen

Lab ID	Sample ID	Analysis Method	Prep Method
3041618004	965	EPA 353.2	EPA 353.2
3041618004	965	EPA 353.2	
3041618004	965	EPA 365.1	EPA 365.1
3041618004	965	Enterolert	Enterolert
3041618004	965	S4500NH3G-11	S4500NH3G-11
3041618004	965	S9223B-04	S9223B-04
3041618004	965	SM2120B-2011	
3041618004	965	SM2130B-2011	
3041618004	965	SM2510B-2011	
3041618004	965	SM4500-Cl G-2011	
3041618004	965	SM5540C-2011	
3041618005	912	Calculation	
3041618005	912	D6919-09	
3041618005	912	EPA 200.7	EPA TRMD
3041618005	912	EPA 300.0	
3041618005	912	EPA 353.2	
3041618005	912	EPA 365.1	EPA 365.1
3041618005	912	Enterolert	Enterolert
3041618005	912	S4500NH3G-11	S4500NH3G-11
3041618005	912	S9223B-04	S9223B-04
3041618005	912	SM2120B-2011	
3041618005	912	SM2130B-2011	
3041618005	912	SM2510B-2011	
3041618005	912	SM4500-Cl G-2011	
3041618005	912	SM5540C-2011	

SB

ALS Environmental
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Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

304161 8

1 of 1

Client Name: BayLand Consultants & Designers Inc.

Address: 7455 New Ridge Road, Suite T
Hanover, MD 21076

Contact: Zach Tate

Phone#: 410-694-9401

Project Name/#: Takoma Park Dry Weather Screening

Bill To: Same

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: _____ **Approved By:** _____

Email? [X] -Y _____

Fax? [ ] -Y No.: _____

(Receiving Lab)

Cooler Temp: 0 Therm ID: 315

No. of Coolers: _____

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

Courier/Tracking #:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	200.7TB, 200.7THA, 200.7TK	300_WCHL, 300_WFLU	365.1WTP	NH3_IC	S2120BCOLR, S2130BTURB	S2510WCOND, S4500CTKNW	S4500TCL, S5540WMBAS	TOTALN, TRMD200.7	S9223ECOLM, S9223MD_TC	S9230COLM	Sample/COC Comments
					Container Type: Plastic jar										
					Container Size										
					Preservative										
					ANALYSES/METHOD REQUESTED										
					Enter Number of Containers Per Sample or Field Results Below.										
212	6/24	9:30a	Provided	Water	1	1	1	1	1	1	1	1	1	1	
80	6/24	10:10a			1	1	1	1	1	1	1	1	1	1	@ MDT for each set
1018	6/24	1:00p			1	1	1	1	1	1	1	1	1	1	received
965	6/24	2:20p			1	1	1	1	1	1	1	1	1	1	1 P 1L UNP
912	6/24	3:30p			1	1	1	1	1	Micro Analyzed @ Columbia, MD		1	1	1	1 P 500ml UNP
												2°			FNI 1 P 250ml H_2SO_4
												1815	T#294		1 P 125ml ST
															9D 6/20/19

ALSI Field Services: oPickup oLabor oComposite Sampling oRental Equipment oOther: _____

Project Comments:

LOGGED BY(signature): _____ DATE 6/24/19 TIME 14:00

REVIEWED BY(signature): _____ DATE 6/24/19 TIME 14:00

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	BayLand Consultants & Designers, Inc.	6/24/2019	4:30	2		6/24	1715
3		6/24	1840	4	COMMON COURIER / ALS COURIER		
5	COMMON COURIER / ALS COURIER			6		6/24/19	2330
7				8			
9				10			

Data Deliverables: [X] Standard [ ] CLP-like [ ] USACE [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [X] MD [ ] WV

Reportable to PADEP? Yes [ ] PWSID # _____

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type- _____

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

Copies: WHITE - ORIGINAL CANARY - CUSTOMER MAILING PINK - FILE GOLDENROD - CUSTOMER COPY

Rev 8/04

1618

LETTER OF TRANSMITTAL

DATE: June 24, 2019	JOB NO. 8_32601
TO: Ms Shannon Butler	
ALS Global	
RE: Takoma Park Dry Weather Screening	

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
7455 New Ridge Road, Suite T Phone: (410) 694-9401
Hanover, Maryland 21076 Fax: (410) 694-9405
Website: www.baylandinc.com

The following items are: [X] Attached [ ] Sent under separate cover via _____

[ ] Shop drawings [ ] Prints [ ] Plans [ ] Samples

[ ] Copy of letter [ ] Report [ ] Photos [ ] Specifications

[X] Other: ~~twenty~~ ~~(25~~ Water Samples [ ] COE Permit [ ] Wetland License

COPIES	DATE	NO. PAGES	DESCRIPTION
1	6/24/19	N/A	Water samples for testing

ITEMS ARE TRANSMITTED as checked below:

[ ] For approval & signature [ ] Approved as submitted [ ] Returned after loan to us

[X] For your use [ ] For review & comment [ ] Prints returned after loan to us

[ ] Approved as noted [ ] Returned for corrections [ ] For bids due on _____

[ ] As requested [ ] Per discussion [X] Other: For Payment

Remarks: Please perform water quality testing according to ALSI Quote # 701680 on ~~( )~~ samples labeled for Takoma Park Dry Weather Screening: ~~twenty~~ 25 five

Please email the results, followed by mailed final copies. Please contact me at (410) 694-9401 or ztate@baylandinc.com with any questions.

COPY TO: _____

SIGNED: _____
Zach Tate

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

Condition of Sample Receipt Form

Client:	Work Order #:	Initials:	Date:
Bay Land	3041618	QD	6/25/19

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

Cooler #:								
Temperature (°C):	0°C							
Thermometer ID:	318							
Radiological (µCi):								

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

Collected by client

did not received HNO_3 bottle, made @ MDT

Bottle type, pres, count added to COC

C/G not on COC

Matrix is water per COC, micro analyzed past hold for ~~all~~ TC/EC, 8 hr hold time

matrix is surface water per client

Rev. 4/29/2019

ALS Environmental

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July 25, 2019

8-32601.1
ZT

Mr. Zachary Tate
BayLands Consultants & Designers, Inc.
7455 New Ridge Rd. Suite T
Hanover, MD 21076

Certificate of Analysis

Project Name:	**2019-MS4 TESTING - MD SITE**	Workorder:	**3042448**
Purchase Order:		Workorder ID:	**Takoma Park Dry Weather Screen**

Dear Mr. Tate:

Enclosed are the analytical results for samples received by the laboratory on Thursday, June 27, 2019.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Shannon Butler (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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

CC: Mr. Bill Heckert

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

Shannon Butler
Ms. Shannon Butler
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3042448001	881	Water	6/27/2019 08:50	6/27/2019 21:40	Collected by Client
3042448002	879	Water	6/27/2019 09:05	6/27/2019 21:40	Collected by Client
3042448003	853	Water	6/27/2019 09:35	6/27/2019 21:40	Collected by Client
3042448004	289	Water	6/27/2019 11:20	6/27/2019 21:40	Collected by Client
3042448005	290	Water	6/27/2019 11:25	6/27/2019 21:40	Collected by Client
3042448006	1106	Water	6/27/2019 13:30	6/27/2019 21:40	Collected by Client
3042448007	1153	Water	6/27/2019 14:15	6/27/2019 21:40	Collected by Client
3042448008	736	Water	6/27/2019 16:15	6/27/2019 21:40	Collected by Client
3042448009	832	Water	6/27/2019 08:40	6/27/2019 21:40	Collected by Client
3042448010	1220	Water	6/27/2019 14:00	6/27/2019 21:40	Collected by Client

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SAMPLE SUMMARY

Workorder: 3042448 Takoma Park Dry Weather Screen

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3042448 Takoma Park Dry Weather Screen

Sample Comments

Lab ID: 3042448001 **Sample ID:** 881 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448002 **Sample ID:** 879 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448003 **Sample ID:** 853 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448004 **Sample ID:** 289 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448005 **Sample ID:** 290 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448006 **Sample ID:** 1106 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

PROJECT SUMMARY

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: 3042448007 **Sample ID:** 1153 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448008 **Sample ID:** 736 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448009 **Sample ID:** 832 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.
The Enterococcus analysis was performed at the ALS Columbia facility. Any accreditations listed on this report are not applicable.

Lab ID: 3042448010 **Sample ID:** 1220 **Sample Type:** SAMPLE

The Total Coliform result of "0" indicates that total coliform were absent from the sample and that the sample does not exceed the drinking water limit established by the USEPA for total coliform and is considered to be bacteroilogically potable. The Total Coliform result of "1" indicates that total coliform were present in the sample and that the sample exceeds the drinking water limit established by the USEPA for total coliform and is considered to be bacteriologically nonpotable.

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448001** Date Collected: 6/27/2019 08:50 Matrix: Water

Sample ID: **881** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.271		mg/L	0.100	D6919-09			7/4/19 08:52	AK	C
Chloride	176		mg/L	2.0	EPA 300.0			6/28/19 07:49	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	10	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 07:49	CHW	A
Nitrate/Nitrite-N	0.34		mg/L	0.10	EPA 353.2			7/22/19 13:40	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	756		umhos/cm	1	SM2510B-2011			7/6/19 04:01	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	ND	4	mg/L	1.0	S4500NH3G-11	7/11/19 03:00	II	7/11/19 18:29	C_W	C
Total Nitrogen	ND		mg/L	1.10	Calculation			7/25/19 00:14	NJA	C
Turbidity	1.24		NTU	0.10	SM2130B-2011			6/28/19 09:20	R2B	A
METALS										
Hardness	173		mg/L	0.33	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:16	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:16	MNP	D1
Potassium, Total	5.3		mg/L	0.25	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:16	MNP	D1
MICROBIOLOGY										
E. Coli	248	6	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	5	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	1550	7	MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448002** Date Collected: 6/27/2019 09:05 Matrix: Water

Sample ID: **879** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	ND		mg/L	0.100	D6919-09			7/4/19 11:04	AK	C
Chloride	170		mg/L	2.0	EPA 300.0			6/28/19 08:06	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	10	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 08:06	CHW	A
Nitrate/Nitrite-N	0.36		mg/L	0.10	EPA 353.2			7/22/19 13:41	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	751		umhos/cm	1	SM2510B-2011			7/6/19 04:03	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 14:27	C_W	C
Total Nitrogen	ND		mg/L	1.10	Calculation			7/25/19 00:14	NJA	C
Turbidity	0.82		NTU	0.10	SM2130B-2011			6/28/19 09:20	R2B	A
METALS										
Hardness	168		mg/L	0.66	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:47	MNP	D1
Boron, Total	ND		mg/L	0.10	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:47	MNP	D1
Potassium, Total	4.7		mg/L	0.50	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:47	MNP	D1
MICROBIOLOGY										
E. Coli	461	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	>2419.6	6	MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448003** Date Collected: 6/27/2019 09:35 Matrix: Water

Sample ID: **853** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	ND		mg/L	0.100	D6919-09			7/4/19 10:49	AK	C
Chloride	134		mg/L	2.0	EPA 300.0			6/28/19 08:24	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	5	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 08:24	CHW	A
Nitrate/Nitrite-N	2.32		mg/L	1.00	EPA 353.2			7/22/19 10:43	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	522		umhos/cm	1	SM2510B-2011			7/6/19 04:04	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 14:24	C_W	C
Total Nitrogen	2.32		mg/L	2.00	Calculation			7/25/19 00:14	NJA	C
Turbidity	1.16		NTU	0.10	SM2130B-2011			6/28/19 09:20	R2B	A
METALS										
Hardness	92.9		mg/L	0.33	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:20	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:20	MNP	D1
Potassium, Total	3.4		mg/L	0.25	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:20	MNP	D1
MICROBIOLOGY										
E. Coli	32	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	38	6	MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448004** Date Collected: 6/27/2019 11:20 Matrix: Water

Sample ID: **289** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.375		mg/L	0.100	D6919-09			7/4/19 01:59	AK	C
Chloride	217		mg/L	5.0	EPA 300.0			7/2/19 11:05	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	25	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 10:08	CHW	A
Nitrate/Nitrite-N	2.09		mg/L	1.00	EPA 353.2			7/22/19 10:44	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	971		umhos/cm	1	SM2510B-2011			7/6/19 04:06	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	1.4		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 19:04	C_W	C
Total Nitrogen	3.49		mg/L	2.00	Calculation			7/25/19 00:14	NJA	C
Turbidity	8.34		NTU	0.10	SM2130B-2011			6/28/19 09:20	R2B	A
METALS										
Hardness	209		mg/L	0.33	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:26	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:26	MNP	D1
Potassium, Total	8.4		mg/L	0.25	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:26	MNP	D1
MICROBIOLOGY										
E. Coli	105	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	190		MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448005** Date Collected: 6/27/2019 11:25 Matrix: Water

Sample ID: **290** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.174		mg/L	0.100	D6919-09			7/4/19 10:35	AK	C
Chloride	230		mg/L	5.0	EPA 300.0			7/2/19 11:24	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	60	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 10:25	CHW	A
Nitrate/Nitrite-N	1.59		mg/L	1.00	EPA 353.2			7/22/19 10:45	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	1110		umhos/cm	1	SM2510B-2011			7/6/19 04:07	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	1.0		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 14:19	C_W	C
Total Nitrogen	2.59		mg/L	1.00	Calculation			7/25/19 00:14	NJA	C
Turbidity	32.6		NTU	0.10	SM2130B-2011			6/28/19 09:20	R2B	A
METALS										
Hardness	220		mg/L	0.33	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:40	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:40	MNP	D1
Potassium, Total	10.3		mg/L	0.25	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:40	MNP	D1
MICROBIOLOGY										
E. Coli	2420	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	>2419.6		MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448006** Date Collected: 6/27/2019 13:30 Matrix: Water

Sample ID: **1106** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.591		mg/L	0.100	D6919-09			7/4/19 02:29	AK	C
Chloride	387		mg/L	10.0	EPA 300.0			7/2/19 11:42	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	100	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 10:43	CHW	A
Nitrate/Nitrite-N	1.06		mg/L	0.10	EPA 353.2			7/22/19 13:42	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	1180		umhos/cm	1	SM2510B-2011			7/6/19 04:09	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	1.1		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 14:16	C_W	C
Total Nitrogen	2.16		mg/L	1.10	Calculation			7/25/19 00:14	NJA	C
Turbidity	46.0		NTU	0.10	SM2130B-2011			6/28/19 09:20	R2B	A
METALS										
Hardness	179		mg/L	0.33	EPA 200.7	7/3/19 09:20	AHI	7/8/19 12:19	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/3/19 09:20	AHI	7/8/19 12:19	MNP	D1
Potassium, Total	5.8		mg/L	0.25	EPA 200.7	7/3/19 09:20	AHI	7/8/19 12:19	MNP	D1
MICROBIOLOGY										
E. Coli	5	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	133		MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448007** Date Collected: 6/27/2019 14:15 Matrix: Water
Sample ID: **1153** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	ND		mg/L	0.100	D6919-09			7/4/19 11:19	AK	C
Chloride	186		mg/L	5.0	EPA 300.0			7/2/19 12:00	CHW	A
Chlorine, Total Residual	0.16	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	15	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 11:00	CHW	A
Nitrate/Nitrite-N	1.93		mg/L	1.00	EPA 353.2			7/22/19 10:47	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	129		umhos/cm	1	SM2510B-2011			7/6/19 04:10	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	1.1		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 19:41	C_W	C
Total Nitrogen	3.03		mg/L	2.00	Calculation			7/25/19 00:14	NJA	C
Turbidity	2.76		NTU	0.10	SM2130B-2011			6/28/19 09:30	R2B	A
METALS										
Hardness	115		mg/L	0.33	EPA 200.7	7/3/19 09:20	AHI	7/8/19 12:23	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/3/19 09:20	AHI	7/8/19 12:23	MNP	D1
Potassium, Total	4.1		mg/L	0.25	EPA 200.7	7/3/19 09:20	AHI	7/8/19 12:23	MNP	D1
MICROBIOLOGY										
E. Coli	548	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	>2419.6		MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448008** Date Collected: 6/27/2019 16:15 Matrix: Water

Sample ID: **736** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.162		mg/L	0.100	D6919-09			7/4/19 02:14	AK	C
Chloride	186		mg/L	5.0	EPA 300.0			7/2/19 12:19	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	5	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 11:17	CHW	A
Nitrate/Nitrite-N	1.22		mg/L	1.00	EPA 353.2			7/22/19 10:48	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/2/19 07:18	JXB	7/5/19 14:17	RXB	C
Specific Conductance	750		umhos/cm	1	SM2510B-2011			7/6/19 04:12	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	ND		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 19:07	C_W	C
Total Nitrogen	ND		mg/L	2.00	Calculation			7/25/19 00:14	NJA	C
Turbidity	1.13		NTU	0.10	SM2130B-2011			6/28/19 09:30	R2B	A
METALS										
Hardness	189		mg/L	0.33	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:43	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:43	MNP	D1
Potassium, Total	4.7		mg/L	0.25	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:43	MNP	D1
MICROBIOLOGY										
E. Coli	45	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	921		MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448009** Date Collected: 6/27/2019 08:40 Matrix: Water

Sample ID: **832** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.154		mg/L	0.100	D6919-09			7/3/19 05:07	AK	C
Chloride	201		mg/L	5.0	EPA 300.0			7/2/19 12:37	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	15	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 11:35	CHW	A
Nitrate/Nitrite-N	1.40		mg/L	1.00	EPA 353.2			7/22/19 10:56	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	847		umhos/cm	1	SM2510B-2011			7/6/19 04:14	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	1.1		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 19:49	C_W	C
Total Nitrogen	2.50		mg/L	2.00	Calculation			7/25/19 00:14	NJA	C
Turbidity	3.94		NTU	0.10	SM2130B-2011			6/28/19 09:30	R2B	A
METALS										
Hardness	129		mg/L	0.33	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:36	MNP	D1
Boron, Total	ND		mg/L	0.050	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:36	MNP	D1
Potassium, Total	4.4		mg/L	0.25	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:36	MNP	D1
MICROBIOLOGY										
E. Coli	152	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Performed in Columbia MD Lab										
Enterococcus	1410	6	MPN/100mL	1	Enterolert	6/27/19 18:42	JCW	6/28/19 18:42	JCW	F

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID: **3042448010** Date Collected: 6/27/2019 14:00 Matrix: Water

Sample ID: **1220** Date Received: 6/27/2019 21:40

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Ammonia-N	0.929		mg/L	0.100	D6919-09			7/4/19 11:34	AK	C
Chloride	165		mg/L	2.0	EPA 300.0			6/28/19 11:52	CHW	A
Chlorine, Total Residual	ND	1	mg/L	0.10	SM4500-Cl G-2011			6/28/19 07:27	R2B	A
Color, Apparent	20	2	CU	5	SM2120B-2011			6/28/19 06:10	R2B	A
Fluoride	ND		mg/L	0.20	EPA 300.0			6/28/19 11:52	CHW	A
Nitrate/Nitrite-N	0.25		mg/L	0.10	EPA 353.2			7/22/19 13:48	C_D	C
Phosphorus, Total	ND		mg/L	0.10	EPA 365.1	7/3/19 07:06	JXB	7/9/19 13:00	JXB	C
Specific Conductance	716		umhos/cm	1	SM2510B-2011			7/6/19 04:15	MBW	A
Surfactants (MBAS)	ND	3	mg/L	0.025	SM5540C-2011			6/28/19 04:20	MBW	B
Total Kjeldahl Nitrogen	1.7		mg/L	1.0	S4500NH3G-11	7/3/19 03:15	RXB	7/8/19 14:29	C_W	C
Total Nitrogen	1.95		mg/L	1.10	Calculation			7/25/19 00:14	NJA	C
Turbidity	1.66		NTU	0.10	SM2130B-2011			6/28/19 09:30	R2B	A
METALS										
Hardness	164		mg/L	0.66	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:56	MNP	D1
Boron, Total	ND		mg/L	0.10	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:56	MNP	D1
Potassium, Total	5.7		mg/L	0.50	EPA 200.7	7/1/19 12:35	SXC	7/8/19 11:56	MNP	D1
MICROBIOLOGY										
E. Coli	613	5	MPN/100mL	1	S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E
Enterococcus	488	6	MPN/100mL	1	Enterolert	6/28/19 10:29	TDB	6/29/19 10:52	LLJ	F
Total Coliform	>2419.6	4	col/100mL		S9223B-04	6/28/19 10:15	TDB	6/29/19 10:15	LLJ	E

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ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3042448001	1	881	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448001	2	881	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.715.				
3042448001	3	881	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448001	4	881	S4500NH3G-11	Total Kjeldahl Nitrogen
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				
3042448001	5	881	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448001	6	881	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448001	7	881	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				
3042448002	1	879	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448002	2	879	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.896.				
3042448002	3	879	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448002	4	879	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448002	5	879	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448002	6	879	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				
3042448003	1	853	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448003	2	853	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.585.				
3042448003	3	853	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448003	4	853	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448003	5	853	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				

ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

3042448003	6	853	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				
3042448004	1	289	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448004	2	289	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.724.				
3042448004	3	289	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448004	4	289	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448004	5	289	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448005	1	290	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448005	2	290	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.582.				
3042448005	3	290	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448005	4	290	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448005	5	290	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448006	1	1106	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448006	2	1106	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 6.860.				
3042448006	3	1106	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448006	4	1106	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448006	5	1106	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448007	1	1153	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448007	2	1153	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.178.				
3042448007	3	1153	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				

ANALYTICAL RESULTS

Workorder: 3042448 Takoma Park Dry Weather Screen

3042448007	4	1153	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448007	5	1153	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448008	1	736	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448008	2	736	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.069.				
3042448008	3	736	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448008	4	736	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448008	5	736	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448009	1	832	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448009	2	832	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.507.				
3042448009	3	832	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448009	4	832	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448009	5	832	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448009	6	832	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				
3042448010	1	1220	SM4500-Cl G-2011	Chlorine, Total Residual
The chlorine analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3042448010	2	1220	SM2120B-2011	Color, Apparent
The color analyis was performed on a sample aliquot with a pH of 7.610.				
3042448010	3	1220	SM5540C-2011	Surfactants (MBAS)
MBAS calculated as LAS molecular weight 342 g/mol.				
3042448010	4	1220	S9223B-04	Total Coliform
Analyte was analyzed past the 8 hour holding time.				
3042448010	5	1220	S9223B-04	E. Coli
Analyte was analyzed past the 8 hour holding time.				
3042448010	6	1220	Enterolert	Enterococcus
Analyte was analyzed past the 8 hour holding time.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID	Sample ID	Analysis Method	Prep Method
3042448001	881	Calculation	
3042448001	881	D6919-09	
3042448001	881	EPA 200.7	EPA TRMD
3042448001	881	EPA 300.0	
3042448001	881	EPA 353.2	EPA 353.2
3042448001	881	EPA 353.2	
3042448001	881	EPA 365.1	EPA 365.1
3042448001	881	Enterolert	Enterolert
3042448001	881	S4500NH3G-11	S4500NH3G-11
3042448001	881	S9223B-04	S9223B-04
3042448001	881	SM2120B-2011	
3042448001	881	SM2130B-2011	
3042448001	881	SM2510B-2011	
3042448001	881	SM4500-Cl G-2011	
3042448001	881	SM5540C-2011	
3042448002	879	Calculation	
3042448002	879	D6919-09	
3042448002	879	EPA 200.7	EPA TRMD
3042448002	879	EPA 300.0	
3042448002	879	EPA 353.2	EPA 353.2
3042448002	879	EPA 353.2	
3042448002	879	EPA 365.1	EPA 365.1
3042448002	879	Enterolert	Enterolert
3042448002	879	S4500NH3G-11	S4500NH3G-11
3042448002	879	S9223B-04	S9223B-04
3042448002	879	SM2120B-2011	
3042448002	879	SM2130B-2011	
3042448002	879	SM2510B-2011	
3042448002	879	SM4500-Cl G-2011	
3042448002	879	SM5540C-2011	
3042448003	853	Calculation	
3042448003	853	D6919-09	
3042448003	853	EPA 200.7	EPA TRMD
3042448003	853	EPA 300.0	
3042448003	853	EPA 353.2	
3042448003	853	EPA 365.1	EPA 365.1
3042448003	853	Enterolert	Enterolert
3042448003	853	S4500NH3G-11	S4500NH3G-11
3042448003	853	S9223B-04	S9223B-04
3042448003	853	SM2120B-2011	
3042448003	853	SM2130B-2011	
3042448003	853	SM2510B-2011	
3042448003	853	SM4500-Cl G-2011	
3042448003	853	SM5540C-2011	
3042448004	289	Calculation	
3042448004	289	D6919-09	

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID	Sample ID	Analysis Method	Prep Method
3042448004	289	EPA 200.7	EPA TRMD
3042448004	289	EPA 300.0	
3042448004	289	EPA 353.2	
3042448004	289	EPA 365.1	EPA 365.1
3042448004	289	Enterolert	Enterolert
3042448004	289	S4500NH3G-11	S4500NH3G-11
3042448004	289	S9223B-04	S9223B-04
3042448004	289	SM2120B-2011	
3042448004	289	SM2130B-2011	
3042448004	289	SM2510B-2011	
3042448004	289	SM4500-Cl G-2011	
3042448004	289	SM5540C-2011	
3042448005	290	Calculation	
3042448005	290	D6919-09	
3042448005	290	EPA 200.7	EPA TRMD
3042448005	290	EPA 300.0	
3042448005	290	EPA 353.2	
3042448005	290	EPA 365.1	EPA 365.1
3042448005	290	Enterolert	Enterolert
3042448005	290	S4500NH3G-11	S4500NH3G-11
3042448005	290	S9223B-04	S9223B-04
3042448005	290	SM2120B-2011	
3042448005	290	SM2130B-2011	
3042448005	290	SM2510B-2011	
3042448005	290	SM4500-Cl G-2011	
3042448005	290	SM5540C-2011	
3042448006	1106	Calculation	
3042448006	1106	D6919-09	
3042448006	1106	EPA 200.7	EPA TRMD
3042448006	1106	EPA 300.0	
3042448006	1106	EPA 353.2	EPA 353.2
3042448006	1106	EPA 353.2	
3042448006	1106	EPA 365.1	EPA 365.1
3042448006	1106	Enterolert	Enterolert
3042448006	1106	S4500NH3G-11	S4500NH3G-11
3042448006	1106	S9223B-04	S9223B-04
3042448006	1106	SM2120B-2011	
3042448006	1106	SM2130B-2011	
3042448006	1106	SM2510B-2011	
3042448006	1106	SM4500-Cl G-2011	
3042448006	1106	SM5540C-2011	
3042448007	1153	Calculation	
3042448007	1153	D6919-09	
3042448007	1153	EPA 200.7	EPA TRMD
3042448007	1153	EPA 300.0	
3042448007	1153	EPA 353.2	

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID	Sample ID	Analysis Method	Prep Method
3042448007	1153	EPA 365.1	EPA 365.1
3042448007	1153	Enterolert	Enterolert
3042448007	1153	S4500NH3G-11	S4500NH3G-11
3042448007	1153	S9223B-04	S9223B-04
3042448007	1153	SM2120B-2011	
3042448007	1153	SM2130B-2011	
3042448007	1153	SM2510B-2011	
3042448007	1153	SM4500-Cl G-2011	
3042448007	1153	SM5540C-2011	
3042448008	736	Calculation	
3042448008	736	D6919-09	
3042448008	736	EPA 200.7	EPA TRMD
3042448008	736	EPA 300.0	
3042448008	736	EPA 353.2	
3042448008	736	EPA 365.1	EPA 365.1
3042448008	736	Enterolert	Enterolert
3042448008	736	S4500NH3G-11	S4500NH3G-11
3042448008	736	S9223B-04	S9223B-04
3042448008	736	SM2120B-2011	
3042448008	736	SM2130B-2011	
3042448008	736	SM2510B-2011	
3042448008	736	SM4500-Cl G-2011	
3042448008	736	SM5540C-2011	
3042448009	832	Calculation	
3042448009	832	D6919-09	
3042448009	832	EPA 200.7	EPA TRMD
3042448009	832	EPA 300.0	
3042448009	832	EPA 353.2	
3042448009	832	EPA 365.1	EPA 365.1
3042448009	832	Enterolert	Enterolert
3042448009	832	S4500NH3G-11	S4500NH3G-11
3042448009	832	S9223B-04	S9223B-04
3042448009	832	SM2120B-2011	
3042448009	832	SM2130B-2011	
3042448009	832	SM2510B-2011	
3042448009	832	SM4500-Cl G-2011	
3042448009	832	SM5540C-2011	
3042448010	1220	Calculation	
3042448010	1220	D6919-09	
3042448010	1220	EPA 200.7	EPA TRMD
3042448010	1220	EPA 300.0	
3042448010	1220	EPA 353.2	EPA 353.2
3042448010	1220	EPA 353.2	
3042448010	1220	EPA 365.1	EPA 365.1
3042448010	1220	Enterolert	Enterolert
3042448010	1220	S4500NH3G-11	S4500NH3G-11

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3042448 Takoma Park Dry Weather Screen

Lab ID	Sample ID	Analysis Method	Prep Method
3042448010	1220	S9223B-04	S9223B-04
3042448010	1220	SM2120B-2011	
3042448010	1220	SM2130B-2011	
3042448010	1220	SM2510B-2011	
3042448010	1220	SM4500-Cl G-2011	
3042448010	1220	SM5540C-2011	

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

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALSI

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC ALSI *30424488*

1 of 1

Client Name: BayLand Consultants & Designers Inc.

Address: 7455 New Ridge Road, Suite T
Hanover, MD 21076

Contact: Zach Tate

Phone#: 410-694-9401

Project Name/#: Takoma Park Dry Weather Screening

Bill To: Same

TAT [x] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required: _____ Approved By: _____

Email? [x] Y

Fax? [ ] Y No.: _____

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	200.7TB, 200.7THA, 200.7TK	300_WCHL, 300_WFLU	365.1WTP	NH3_IC	S2120BCOLR, S2130BTURB	S2510WCOND, S4500CTKNW	S4500TCL, S5540WMBAS	TOTALN, TRMD200.7	S9223ECOLM	S9230COLM, S9223MD_TC
			Container Type		Plastic Jar									
			Container Size											
			Preservative											
			ANALYSES/METHOD REQUESTED											
			Enter Number of Containers Per Sample or Field Results Below.											
881	6/27/19	0850	Provided	Surface Water	1	1	1	1	1	1	1	1	1	1
879		0905			1	1	1	1	1	1	1	1	1	1
853		0935			1	1	1	1	1	1	1	1	1	1
289		1120			1	1	1	1	1	1	1	1	1	1
290		1125			1	1	1	1	1	1	1	1	1	1
[redacted] 1106		1330			1	1	1	1	1	1	1	1	1	1
1153		1415			1	1	1	1	1	1	1	1	1	1
736		1615			1	1	1	1	1	1	1	1	1	1
832		0840			1	1	1	1	1	1	1	1	1	1
1220 *	6/27/19	1400			1	1	1	→	1	1	1	1	1	1
	qn	6/28/19												

Receipt Information (completed by Receiving Lab)

Cooler Temp: 2.2 Therm ID: 318

No. of Coolers: 2

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

Courier/Tracking #:

Sample/COC Comments

Total Coliform up to MIDDLETOWN
*ENT RAN IN Columbia. JW 6/28
Micro Analyzed TH 6/24 @ Columbia, MD JW
1838

Received @ MDT
1 P 1L UNP
1 P 500 UNP
1 P 250 H_2SO_4
1 P 125 ST
qn 6/28/19

* Added to COC as received

ALSI Field Services: oPickup oLabor oComposite Sampling oRental Equipment
oOther: _____

Project Comments:

LOGGED BY(signature): _____ DATE 6/27/19 TIME 5:00

REVIEWED BY(signature): _____ DATE 6/27/19 TIME 5:00

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	BayLand Consultants & Designers, Inc.	6/27/2019	1744	2	[signature]	6/27	1744
3	[signature]			4			
5	[signature] ALS Courier	6/27		6	ALS Courier		
7				8	[signature] ALS	6/28/19	2140
9				10			

Data Deliverables: [x] Standard [ ] CLP-like [ ] USACE [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [x] MD [ ] WV

Reportable to PADEP? Yes [ ] PWSID # _____

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type: _____

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

Copies: WHITE - ORIGINAL CANARY - CUSTOMER MAILING PINK - FILE GOLDENROD - CUSTOMER COPY

Rev 8/04

2448

LETTER OF TRANSMITTAL

DATE: June 27, 2019	JOB NO. 8_32601
TO: Ms Shannon Butler	
ALS Global	
RE: Takoma Park Dry Weather Screening	

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
7455 New Ridge Road, Suite T Phone: (410) 694-9401
Hanover, Maryland 21076 Fax: (410) 694-9405
Website: www.baylandinc.com

The following items are: [X] Attached [ ] Sent under separate cover via _____

[ ] Shop drawings [ ] Prints [ ] Plans [ ] Samples

[ ] Copy of letter [ ] Report [ ] Photos [ ] Specifications

[X] Other: ninety (90) Surface Water Samples [ ] COE Permit [ ] Wetland License

COPIES	DATE	NO. PAGES	DESCRIPTION
1	6/27/19	N/A	Surface water samples for testing

ITEMS ARE TRANSMITTED as checked below:

[ ] For approval & signature [ ] Approved as submitted [ ] Returned after loan to us

[X] For your use [ ] For review & comment [ ] Prints returned after loan to us

[ ] Approved as noted [ ] Returned for corrections [ ] For bids due on _____

[ ] As requested [ ] Per discussion [X] Other: For Payment

Remarks: Please perform water quality testing according to ALSI Quote # 701680 on the (10) samples labeled for Takoma Park Dry Weather Screening:

Please email the results, followed by mailed final copies. Please contact me at (410) 694-9401 or ztate@baylandinc.com with any questions.

COPY TO: _____

SIGNED: _____
Zach Tate

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

Condition of Sample Receipt Form

Client:	Work Order #:	Initials:	Date:
Bayland	3042448	GW	6/28/19

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

Cooler #:								
Temperature (°C):	2°C							
Thermometer ID:	318							
Radiological (µCi):								

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

Collected by client

~~001, 002, 003~~ All samples → Analyzed past hold past hold for TC/EC 8hr hold time

Updated to correct bottle counts

Dates/times added to COC from samples

Sample set 1220 added to COC as received

C/G not on COC

Bottle types/pres added to COC

No HNO_3 bottle received, poured off from UNP

Rev. 4/29/2019