

**2016 WATER QUALITY MONITORING
BLUE MARSH RESERVOIR
LEESPORT, PENNSYLVANIA**



**U.S. Army Corps of Engineers
Philadelphia District
Environmental Resources Branch**

January 2017

**2016 Water Quality Monitoring
Blue Marsh Reservoir
Leesport, Pennsylvania**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
1.0 INTRODUCTION	1-1
1.1 PURPOSE OF THE MONITORING PROGRAM	1-1
1.2 DESCRIPTION OF BLUE MARSH RESERVOIR	1-1
1.3 ELEMENTS OF THE STUDY	1-1
2.0 METHODS	2-1
2.1 PHYSICAL STRATIFICATION MONITORING	2-1
2.2 WATER COLUMN CHEMISTRY MONITORING	2-1
2.3 TROPHIC STATE DETERMINATION	2-2
2.4 RESERVOIR BACTERIA MONITORING	2-2
2.5 SWIMMING BEACH MONITORING	2-5
3.0 RESULTS AND DISCUSSION	3-1
3.1 STRATIFICATION MONITORING	3-1
3.1.1 Temperature	3-1
3.1.2 Dissolved Oxygen	3-2
3.1.3 pH	3-5
3.2 WATER COLUMN CHEMISTRY MONITORING	3-10
3.2.1 Ammonia	3-10
3.2.2 Nitrite and Nitrate	3-22

**2016 Water Quality Monitoring
Blue Marsh Reservoir
Leesport, Pennsylvania**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
3.2.3 Total Kjeldahl Nitrogen	3-22
3.2.4 Total Phosphorus	3-22
3.2.5 Total Dissolved Phosphorus	3-23
3.2.6 Dissolved Phosphate	3-23
3.2.7 Total Dissolved Solids	3-23
3.2.8 Total Suspended Solids	3-24
3.2.9 Biochemical Oxygen Demand	3-24
3.2.10 Alkalinity	3-25
3.2.11 Total Organic Carbon	3-25
3.2.12 Chlorophyll a	3-25
3.3 TROPIC STATE DETERMINATION	3-26
3.4 RESERVOIR BACTERIA MONITORING	3-26
3.5 SWIMMING BEACH BACTERIA MONITORING	3-30
4.0 REFERENCES	
APPENDIX A	Stratification/Profile Data Tables
APPENDIX B	Bacteria Sampling Data Tables
APPENDIX C	Laboratory Custody Sheets

**2016 Water Quality Monitoring
Blue Marsh Reservoir
Leesport, Pennsylvania**

TABLE OF CONTENTS

SECTION **PAGE NO.**

LIST OF TABLES

2-1	Blue Marsh Reservoir water quality schedule for 2016 monitoring.....	2-2
2-2	Water quality test methods, detection limits, state regulatory criteria, and sample holding times for water quality parameters monitored at Blue Marsh Reservoir 2016.....	2-3
2-3	Water quality test methods, detection limits, PADEP water quality standards, and sample holding times for bacteria parameters monitored at Blue Marsh Reservoir in 2016.....	2-5
2-4	Swimming Beach bacteria sampling dates at Blue Marsh Reservoir in 2016.....	2-6
3-1	PADEP ammonium nitrogen criteria (Pennsylvania Code, Title 25 1984) Specific ammonia criteria dependent on temperature and pH.....	3-10
3-2	Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016.....	3-11
3-3	EPA trophic classification criteria and monthly measures for Blue Marsh Reservoir in 2016.....	3-26
3-4	Bacteria counts (colonies/100ml) at Blue Marsh Reservoir surface stations during 2016.....	3-29
3-5	Swimming Beach fecal coliform counts (colonies/100ml) and geometric means at three Blue Marsh Reservoir swimming beach stations in 2016.....	3-31
3-6	Swimming Beach e-coli coliform counts (colonies/100ml) and geometric means at three Blue Marsh Reservoir swimming beach stations in 2016.....	3-32

**2016 Water Quality Monitoring
Blue Marsh Reservoir
Leesport, Pennsylvania**

TABLE OF CONTENTS

SECTION **PAGE NO.**

LIST OF FIGURES

2-1	Location map for Blue Marsh Reservoir monitoring stations in 2016.....	2-4
2-2	Swimming Beach monitoring stations at Blue Marsh reservoir in 2016.....	2-6
3-1	Temperatures measured in surface waters of Blue Marsh Reservoir during 2016...	3-4
3-2	Stratification of temperature measured in the water column of Blue Marsh Reservoir at station BM-6 during 2016.....	3-5
3-3	Dissolved oxygen measured in surface waters of Blue Marsh Reservoir during 2016.....	3-7
3-4	Dissolved oxygen measured in the water column of Blue Marsh Reservoir at station BM-6 during 2016.....	3-8
3-5	Measures of pH in surface waters of Blue Marsh Reservoir during 2016.....	3-9
3-6	Stratification of pH measured in the water column of Blue Marsh Reservoir at station BM-6 during 2016.....	3-10
3-7	Carlson Trophic state indices calculated from secchi disk depth, concentrations of chlorophyll a and Total Phosphorus measured in surface waters of Blue Marsh Reservoir at station BM-6 during 2016.....	3-28

1.0 INTRODUCTION

1.1 PURPOSE OF THE MONITORING PROGRAM

The U.S. Army Corps of Engineers (USACE) manages Blue Marsh Reservoir located in east-central Pennsylvania on the Tulpehocken Creek, which is within the Delaware River Basin. Blue Marsh Reservoir provides flood control and a dependable water supply to downstream communities west of Reading, PA. Additionally, the reservoir provides important habitat for fish, waterfowl, and other wildlife, and recreational opportunities through fishing, boating, and swimming. Due to the broad range of uses and demands that Blue Marsh Reservoir serves, the USACE monitors water quality, and other aspects related to ecological health, primarily to ensure public health safety. Results from water quality monitoring are compared to state water quality standards and used to diagnose other problems that commonly affect reservoir health such as low dissolved oxygen, nutrient enrichment and toxic loadings. This report summarizes the results of water quality monitoring at Blue Marsh Reservoir in 2016.

1.2 DESCRIPTION OF BLUE MARSH RESERVOIR

Blue Marsh Reservoir was designed to provide flood control, a water supply, and enhanced water quality to downstream communities along Tulpehocken Creek. Located about six miles northwest of Reading, Pennsylvania near Route 183, the reservoir dams a drainage area of 175 square miles. The dam, completed in 1979, can impound up to 42.3 billion gallons of water. The primary surface water inputs into Blue Marsh Reservoir other than Tulpehocken Creek include Wolf, Northkill, and Little Northkill Creek from the northwest; Spring Creek from the west; and Licking Creek from the northeast. The reservoir is approximately 6 miles long and is 52 feet deep immediately above the dam near Lower Heidelberg during normal summer pool.

1.3 ELEMENTS OF THE STUDY

The USACE, Philadelphia District, has been monitoring the water quality of Blue Marsh Reservoir since 1979. Over this time, the yearly monitoring designs have evolved to address new concerns such as health of public drinking water and contamination of reservoir bottom sediments. The 2016 monitoring program follows that in most recent years and includes the following major elements:

- Monthly water quality and bacteria monitoring of reservoir and upstream sources to evaluate compliance with Pennsylvania state water quality standards and to evaluate the health of the reservoir ecosystem starting on 10 May and ending on 12 September 2016;
- Monthly profile samples for temperature, dissolved oxygen, chlorophyll, pH, turbidity, and conductivity at all stations in the reservoir and watershed; and
- Twice weekly coliform bacteria monitoring at three beach stations - to ensure public health and safety at the Blue Marsh Reservoir swimming beach area.

2.0 METHODS

2.1 PHYSICAL STRATIFICATION MONITORING

Physical stratification monitoring of the water column was conducted monthly at Blue Marsh Reservoir from May to September 2016 (Table 2-1). Stratification parameters included temperature, dissolved oxygen (DO), pH, Chlorophyll a, turbidity, and conductivity. Monitoring was conducted at ten fixed stations located throughout the reservoir watershed (Fig. 2-1). Six stations were located within the reservoir body (BM-2, BM-6, BM-7, BM-8, BM-9, and BM-10) for which water quality was measured from surface to bottom at 5-ft depth intervals. Three stations (BM-1S, BM-5S, and BM-11S) were monitored for surface water quality only. All water quality parameters were measured with a calibrated YSI 6600 V2-4 water quality meter. For this report, all of the stratification monitoring results, when applicable, were summarized and compared to water quality standards enacted by the Pennsylvania Department of Environmental Protection (PADEP – Chapter 93 Water Quality Standards).

2.2 WATER COLUMN CHEMISTRY MONITORING

Water column chemistry monitoring was conducted five times at Blue Marsh Reservoir during the 2016 sampling season (Table 2-1). Water samples were collected at 9 fixed stations in the reservoir watershed (Fig. 2-1). Surface water samples were collected at stations downstream of the reservoir (BM-1S), and upstream of the reservoir on Tulpehocken Creek (BM-5S) and Northkill Creek (BM-11S). Surface, middle, and bottom water samples were collected at the six stations within the reservoir (BM-2, BM-6, BM-7, BM-8, BM-9, and BM-10). Surface water samples were collected by opening sample containers approximately one foot below the surface of the water. Middle and bottom water samples were collected with a Van Dorn design horizontal water bottle sampler.

Water samples from all depths were analyzed for ammonia, nitrite, nitrate, total Kjeldahl nitrogen (TKN), total phosphorus, ortho-phosphate, soluble phosphorus, total dissolved solids (TDS), total suspended solids (TSS), biochemical oxygen demand (BOD), alkalinity, and total organic carbon. Table 2-2 summarizes the laboratory methods detection limits, state water quality standards, and sample holding times for each water quality parameter monitored.

Table 2-1. Water quality monitoring schedule of Blue Marsh Reservoir during 2016. Monitoring was conducted at 9 fixed stations located throughout the reservoir watershed.					
Date of Sample Collection	Physical Stratification Monitoring (all stations)	Water Column Chemistry Monitoring (all stations)	Trophic State Assessment (BM-6)	(1) Coliform Bacteria Monitoring (all stations)	Drinking Water Monitoring (2)
10 May	X	X	X	X	
06 June	X	X	X	X	
18 July	X	X	X	X	
16 August	X	X	X	X	
12 September	X	X	X	X	
(1) Surface water bacteria samples only					
(2) Drinking water samples are collected quarterly by personnel at each reservoir. This data is not included.					

2.3 TROPHIC STATE DETERMINATION

The trophic state of Blue Marsh Reservoir was determined by methods outlined by Carlson (1977) and EPA (1983). In general, these methods calculated trophic state indices (TSIs) independently for measures of total phosphorus, chlorophyll *a*, and secchi disk depth. Surface water measures of total phosphorus and chlorophyll *a* from chemistry monitoring were averaged in the calculation of monthly TSIs (Table 2-1). Secchi disk depth was measured at station BM-6.

2.4 RESERVOIR COLIFORM BACTERIA MONITORING

Monitoring for coliform bacteria contaminants was conducted monthly at Blue Marsh Reservoir. Water samples were analyzed for total and fecal coliforms. Surface water samples were tested at all stations. Table 2-3 presents the test methods, detection limits, PADEP water quality standards, and sample holding times for the bacteria parameters monitored at Blue Marsh Reservoir in 2016. The bacteria analytical method was based on a membrane filtration technique. All of the samples were analyzed within their respective maximum allowable hold times.

Table 2-2. Water quality test methods, detection limits, state regulatory criteria, and sample holding times for water quality parameters monitored at Blue Marsh Reservoir in 2016.

Parameter	(2) Method	Reporting Limit	PADEP Surface Water Quality Criteria	Allowable Hold Times (Days)
Total Alkalinity	SM20 2320B	1.0 mg/L	Min. 20 mg/L CaCO ₃	14
Biochemical Oxygen Demand (BOD)	SM20 5210B	2.0 mg/L	None	2
Total Phosphorus	SM20 4500-PE	0.01 mg/L	None	28
Diss./Ortho-Phosphate	SM20 4500-PE	0.01 mg/L	None	28
Soluble Phosphorus	SM20 4500-PE	0.05 mg/L	None	28
Total Organic Carbon (TOC)	SM20 5310C	1.0 mg/L	None	28
(3) Total Inorganic Carbon (TIC)	SM20 5310B	NA	None	28
(3) Total Carbon (TOC + TIC)	SM20 5310B	NA	None	28
(1) Chlorophyll <i>a</i>	YSI Probe	---	None	In Situ
Total Kjeldahl Nitrogen	351.2 MCAWW	0.25 mg/L	None	28
Ammonia	D6919-03	0.05 mg/L	Temp. and pH dependent	28
Nitrate	MCAWW 353.2	0.05 mg/L	Maximum 10 mg/L (nitrate + nitrite)	28
Nitrite	MCAWW 353.2	0.05 mg/L		28
Total Dissolved Solids	SM20 2540C	5.0 mg/L	Maximum 750 mg/L	7
Total Suspended Solids	SM20 2540D	3.0 mg/L	None	7

(1) Chlorophyll *a* samples were recorded using a YSI 6600 with a chlorophyll sensor.

(2) Laboratory Methods Reference:

MCAWW- "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM-20- "Standard Methods for the Examination of Water and Wastewater", 22nd Edition, 2012.

SW846- "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", 3rd. Edition, November 1986 and updates.

(3) Samples were not analyzed for Total Carbon and Total Inorganic Carbon in 2016

NA- Not sampled or analyzed by lab

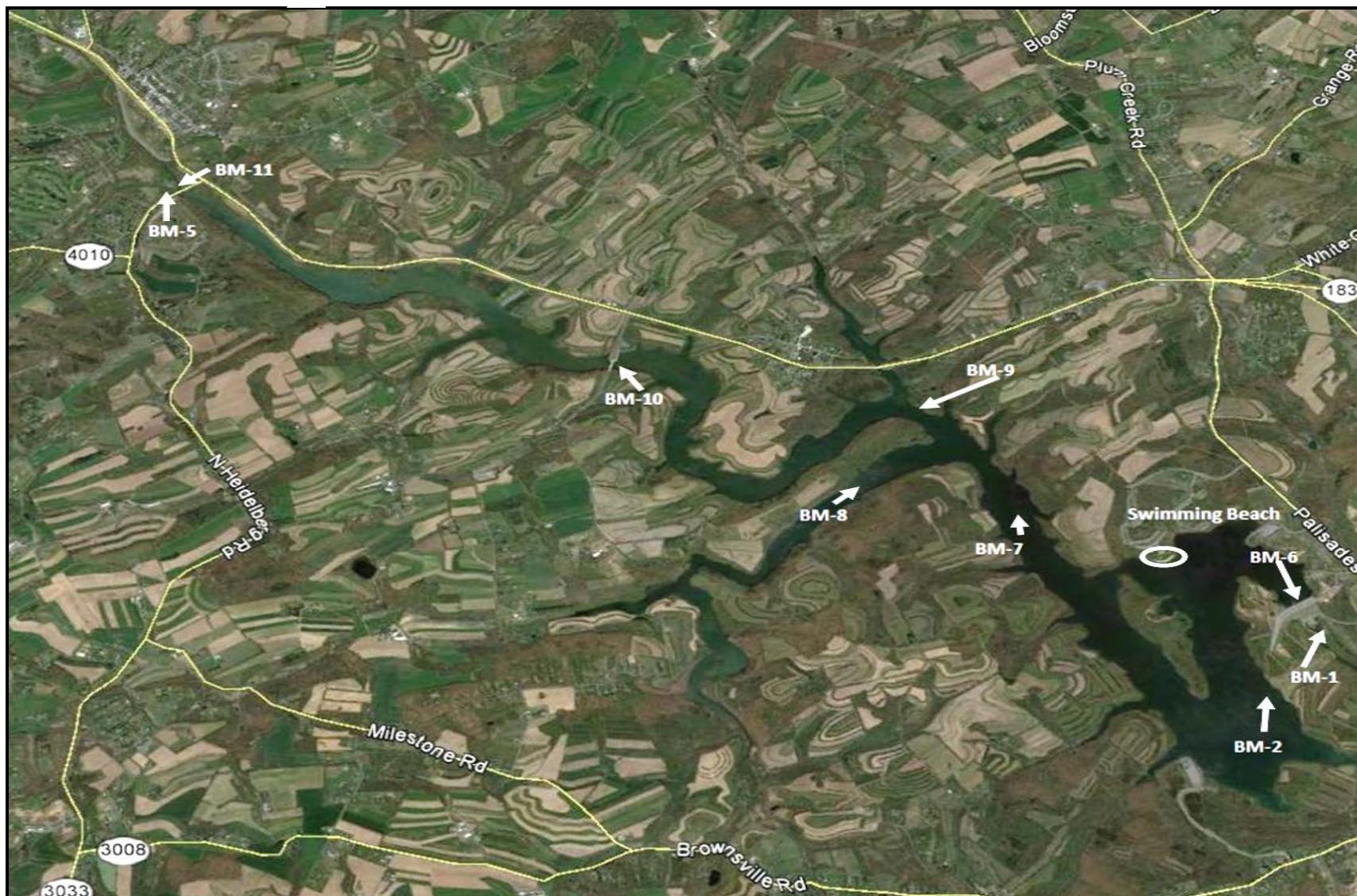


Figure 2-1. Blue Marsh Reservoir and the location of the 9 fixed stations monitored for water quality during 2016

Table 2-3. Water quality test methods, detection limits, PADEP water quality standards, and sample holding times for bacteria parameters monitored at Blue Marsh Reservoir in 2016.		
Parameter	Total Coliform/E-Coli	Fecal Coliform
Test method	SM 9223B	SM9222D
Minimum Detection limit	1 clns/100-mls	2 clns/100-mls
PADEP water quality standard	-	Geometric mean < 200 clns/100-mls
PA Department of Health	-	Geometric mean < 200 clns/100-mls. No sample > 1000 clns/100-mls
Maximum allowable holding time	30 hours	30 hours
Achieved holding time	< 30 hours	< 30 hours

The PADEP monthly coliform bacteria standard is defined as a maximum geometric mean of 200 colonies/100-ml based on 5 consecutive samples collected on different days. In addition, a single sample standard of 1000 colonies/100-ml can also be used. These standards are most applicable at bathing beaches. The Philadelphia District maintains a bathing beach at Blue Marsh Reservoir and conducts separate bacteria sampling of that area. Given our logistical limitations (all monthly reservoir sampling conducted on one day) and the fact that water contact recreation is permitted within the reservoir, the reservoir coliform data collected by the Corps is compared to the single sample standard as a method of collecting and evaluating background coliform data on the main body of the reservoir. Although our sampling design does not fully meet PADEP guidelines for bathing beach monitoring, we feel that this interpretation of the coliform data meets the intent of the PADEP water quality standard for evaluating Blue Marsh Reservoir bacteria levels within the main reservoir body.

2.5 SWIMMING BEACH MONITORING

Additional coliform bacteria monitoring was conducted twice weekly near the public swimming beach at the Dry Brooks day use area (Table 2-4). Three stations (SB-1, SB-2, and SB-3) were monitored in the swimming beach area for total coliform, fecal coliform, and Escherichia coli (Figure 2-2). The coliform bacteria samples were collected and analyzed by the same methods used for monthly coliform bacteria sampling. The bacteria monitoring for Blue Marsh Swimming Beach followed a 4-step program of conditional monitoring. Each step or “condition” of monitoring responded to incremental increases of coliform contamination, and therefore reflected the risk to public health at the swimming beach area.

Week 1	09 and 12 May	Week 10	11 and 14 July
Week 2	16 and 19 May	Week 11	18 and 21 July
Week 3	23 and 26 May	Week 12	25 and 28 July
Week 4	31 May and 02 June	Week 13	01 and 04 August
Week 5	06 and 09 June	Week 14	08 and 11 August
Week 6	13 and 16 June	Week 15	15, 18 and 20 August
Week 7	20 and 23 June	Week 16	22, 24 and 25 August
Week 8	27 and 30 June	Week 17	29 August and 01 September
Week 9	05 and 07 July		

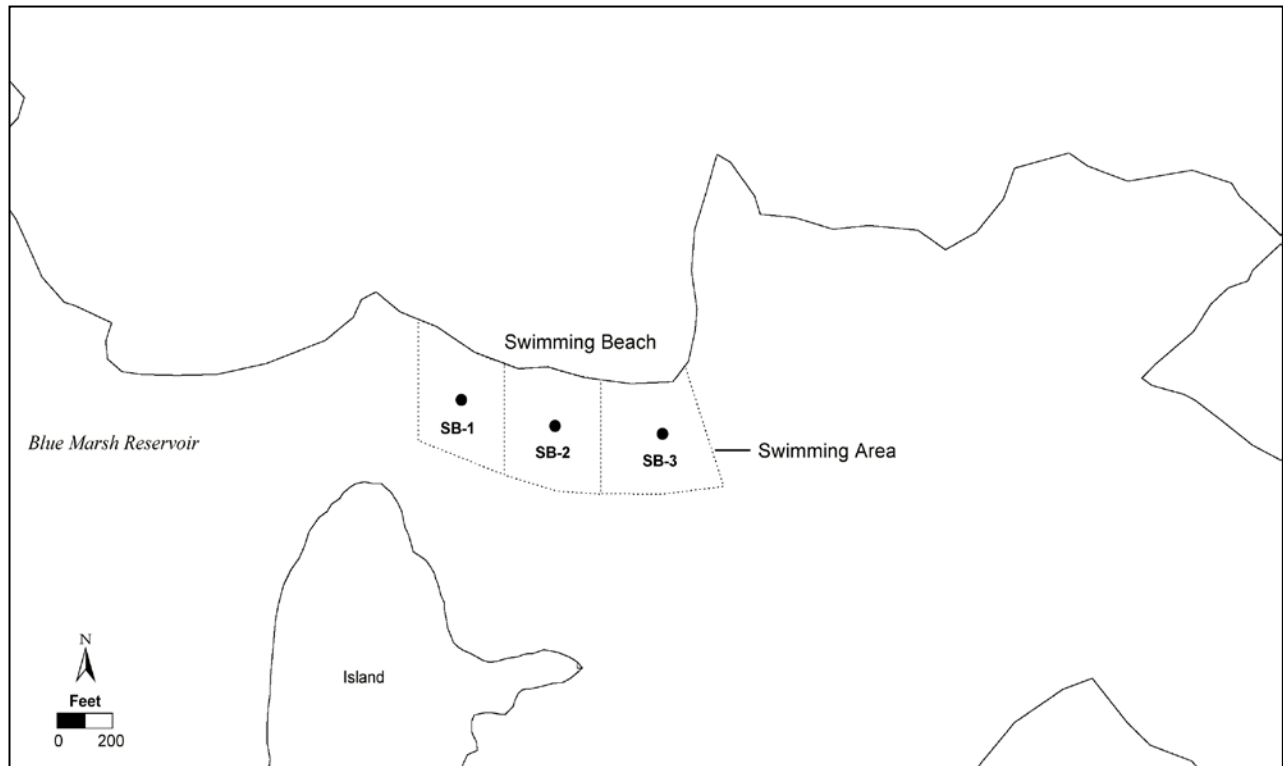


Figure 2-2. Swimming beach bacteriological monitoring stations at Blue Marsh Reservoir in 2016

3.0 RESULTS AND DISCUSSION

3.1 STRATIFICATION MONITORING

The following sections summarize the results of water quality monitoring for physical and chemical parameters: temperature, dissolved oxygen, and pH. Seasonal and spatial patterns of surface water quality measured throughout the reservoir watershed, and seasonal and depth related patterns of the stratified water column based on measures from the deepest portion of the reservoir (station BM-6 or the “Tower”) are described. It is appropriate to focus discussion on tributary source waters influencing reservoir water quality and lake stratification at station BM-6 as water quality problems related to depth are generally most severe in deep water habitats. Corps personnel collected the physical/chemical water quality data discussed herein over the monitoring period from May to September 2016, the most productive time of the year for the reservoir. All of the parameters were measured with a calibrated YSI 6600 V2-4 water quality probe and are presented in Appendix A.

3.1.1 Temperature

Temperature is the primary influencing factor on water density, affects the solubility of many chemicals' compounds, and can therefore influence the effect of pollutants on aquatic life. Increased temperatures elevate the metabolic oxygen demand, in conjunction with reduced oxygen solubility, and can impact many species. Vertical stratification patterns naturally occurring in lakes affect the distribution of dissolved and suspended compounds.

Surface water temperature seasonal patterns upstream of the reservoir at stations BM-5S and BM-11S closely resembled each other throughout the sampling season (Fig. 3-1). Maximum temperatures of 25.72°C and 25.06°C were recorded at station BM-5S and BM-11S respectively in August. The maximum surface water temperature downstream of the reservoir at station BM-1S was 24.13°C in September with a minimum of 12.75°C in May. Downstream temperatures are influenced through selective withdrawals at the Blue Marsh Dam. Annually the Corps performs selective withdrawal releases in an attempt to maintain temperatures downstream in the Tulpehocken Creek of less than 20°C in support of the trout fishery. The ability to meet this objective is dependent on meteorological conditions and other physical and operational limitations. The temperature objective was routinely exceeded in 2016 from mid August through September.

Blue Marsh Reservoir was stratified with respect to temperature during 2016. The stratification pattern was most apparent at station BM-6 or the “Tower” station located in the deepest part of the reservoir (Fig. 3-2). Temperature stratification was evident in June sampling with temperatures from surface (25.00°C) to bottom (10.86°C) differing by 14.14°C. The deeper and cooler temperature (<20°C) water was available for selective withdrawal to attempt to meet downstream temperature objectives through mid August. Stratification peaked in July and a noticeable shift to deeper warmer water temperatures was evident into August and September.

An erosion of the epilimnion was seen in September as the lake began the process of de-stratifying.

3.1.2 Dissolved Oxygen

Dissolved oxygen (DO) is the measure of the amount of DO in water. Typically, DO concentrations in surface waters are less than 10 mg/L. Dissolved Oxygen concentrations are subject to diurnal and seasonal fluctuations that can be influenced, in part, by temperature, river discharge, and photosynthetic activity. Dissolved Oxygen is essential to the respiratory metabolism of most aquatic organisms. It affects the availability and solubility of nutrients and subsequently the productivity of aquatic ecosystems. Low levels of oxygen can facilitate the release of nutrients from bottom sediments.

Surface waters upstream of the reservoir at tributary stations BM-5S and BM-11S had similar seasonal DO patterns throughout the sampling season (Fig. 3-3). The maximum DO concentration of 11.06 mg/L was recorded in May at station BM-11S. The maximum surface water DO concentration downstream of the dam at station BM-1S was 10.70 mg/L recorded in May with a minimum of 7.10 recorded in September.

Seasonal stratification and chemical and biological processes at Blue Marsh Reservoir dramatically influenced the distribution of DO in the water column during 2016 (Fig. 3-4). In June, the influence of stratification was apparent at station BM-6, as DO concentrations decreased from 9.66 mg/L near the surface to 0.04 mg/L near the lake bottom. Historically, the lower oxygen levels deeper in the lake progressively move up the water column to within approximately 15-feet of the surface in mid- to late August. In most years the surface waters remain oxygenated as a result of surface algal productivity and water surface wind mixing. In 2016, this pattern was recorded in July and continued into September. These conditions can be detrimental to water quality and aquatic life. Nonetheless, dissolved oxygen concentrations in the upper water column of Blue Marsh Reservoir were in compliance with PADEP water quality standards during the 2016 sampling season. The Pennsylvania water quality standard for DO is a minimum concentration of 5 mg/L within the epilimnion of stratified lakes.

The health of aquatic ecosystems can be impaired by low DO concentrations in the water column. Hypoxia, or conditions of DO concentrations less than 2 mg/L, is generally accepted as the threshold at which the most severe effects on biota occur. In early June through September of 2016, the lower water column of Blue Marsh was severely affected by hypoxia (Fig. 3-4). Hypoxic water occupied two thirds of the water column in some of these months. Hypoxia in the lower water column is a symptom of eutrophication. Nutrients in the water column feed explosive algal growth at the surface photic zone. Dead and decaying algae sink to lower levels of the water column and during the process of decay; oxygen is removed from the water.

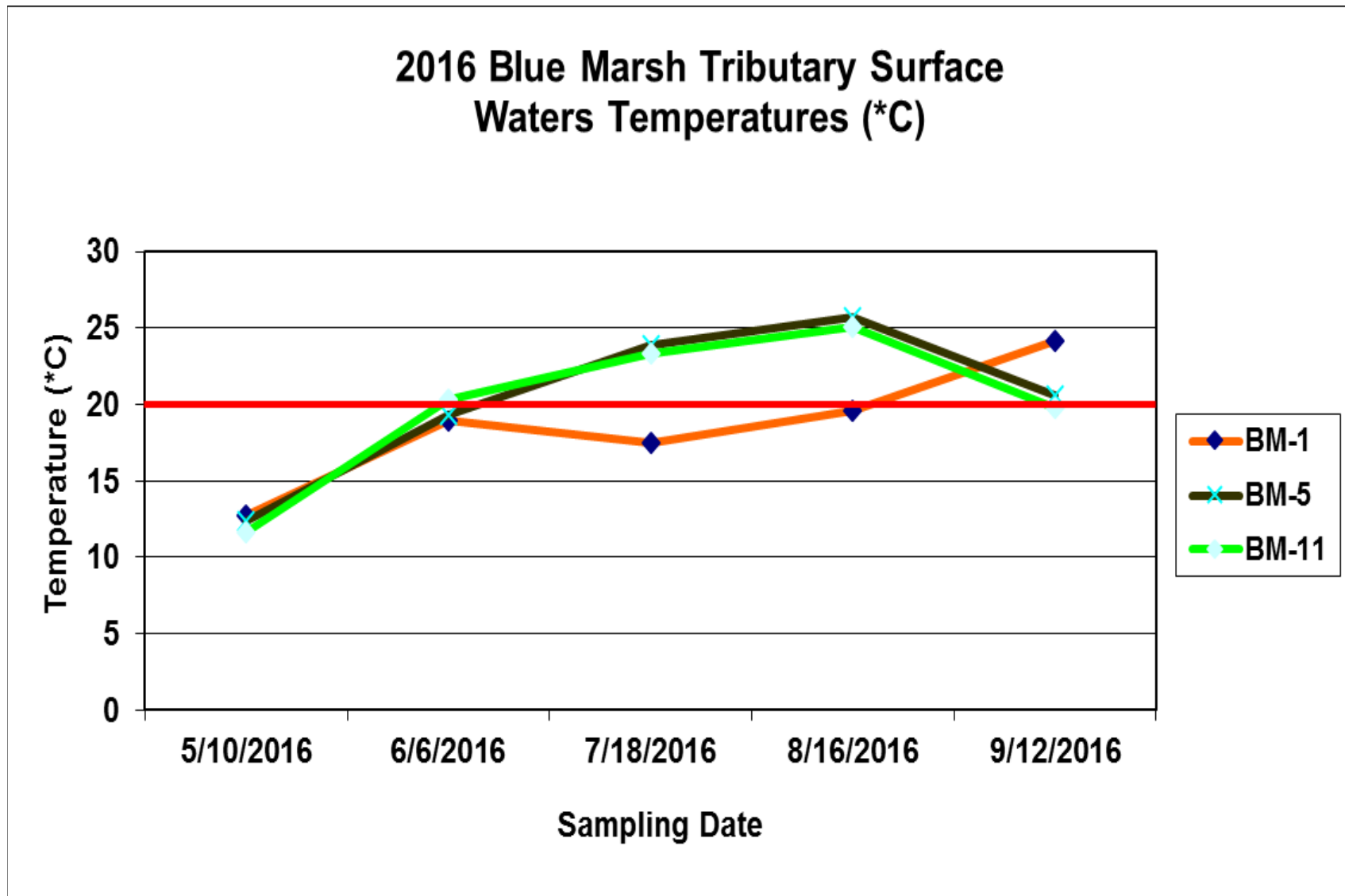


Figure 3-1. Tributary and downstream surface water temperatures ($^{\circ}\text{C}$) measured at Blue Marsh Reservoir in 2016. Station BM-1S is located downstream of the reservoir. See Appendix A for summary of plotted values. The coldwater species preference temperature of 20°C is shown as a red line reference.

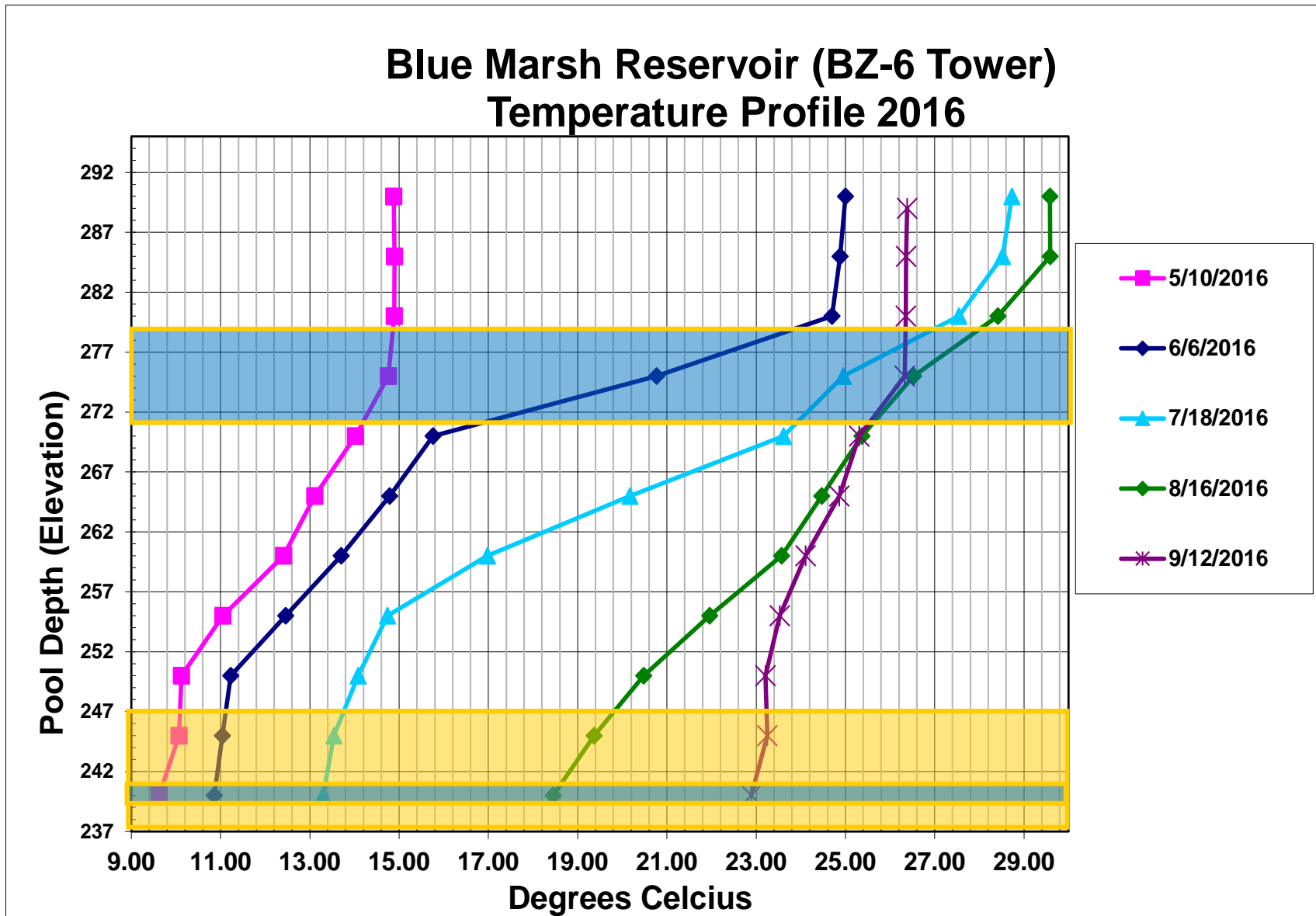


Figure 3-2. Temperature stratification and release portal elevations at station BM-6 of Blue Marsh Reservoir in 2016. See Appendix A for summary of plotted values.

3.1.3 pH

The hydrogen –ion concentration in water is measured as pH. The pH scale is 0-14. A pH below 7 is considered acidic and a pH above 7 is basic. High pH values tend to facilitate solubilization of ammonia, salts, and heavy metals. Low pH levels tend to increase carbonic acid and carbon dioxide concentrations. Lethal effects of pH on aquatic life typically occur below pH 4.5 and above pH 9.5.

Measures of pH in the surface waters at Blue Marsh Reservoirs upstream and downstream sampling stations followed a similar pattern during 2016 (Fig. 3-5). Downstream release station (BM-1S) routinely had slightly lower pH values than upstream stations throughout the sampling season. In the months sampled, two pH measures at upstream stations during the May sampling violated the PADEP water quality standard maximum and minimum pH level of 9.0 and 6.0, respectively. For the entire monitoring period and at all tributary stations, pH ranged from 7.38 to 9.36.

The pH profile in the water column of Blue Marsh Reservoir was consistent with a stratified lake during 2016 (Fig. 3-6). Throughout the monitoring period the upper 10-15 feet of the water column had consistently higher pH measures than the deeper waters. During most months, pH at the surface to a depth of 15 feet ranged between 7.43 and 9.04. In contrast, measures of pH in the lower water column (>15 feet deep) were consistently lower during the monitoring period and ranged between 6.79 and 7.99. The higher pH in surface waters (euphotic zone) of the reservoir is a result of excessive algal blooms. As a function of increased productivity during photosynthesis, algae remove CO₂ from the water column. Dissolved CO₂ is slightly acidic; its reduction in the water column manifests an increase in pH. In August of 2016, this increased surface water productivity resulted in two surface water samples at Blue Marsh Reservoir station BM-6 violating the PADEP pH 9.0 maximum criterion. No other samples violated the state standard during the sampling season.

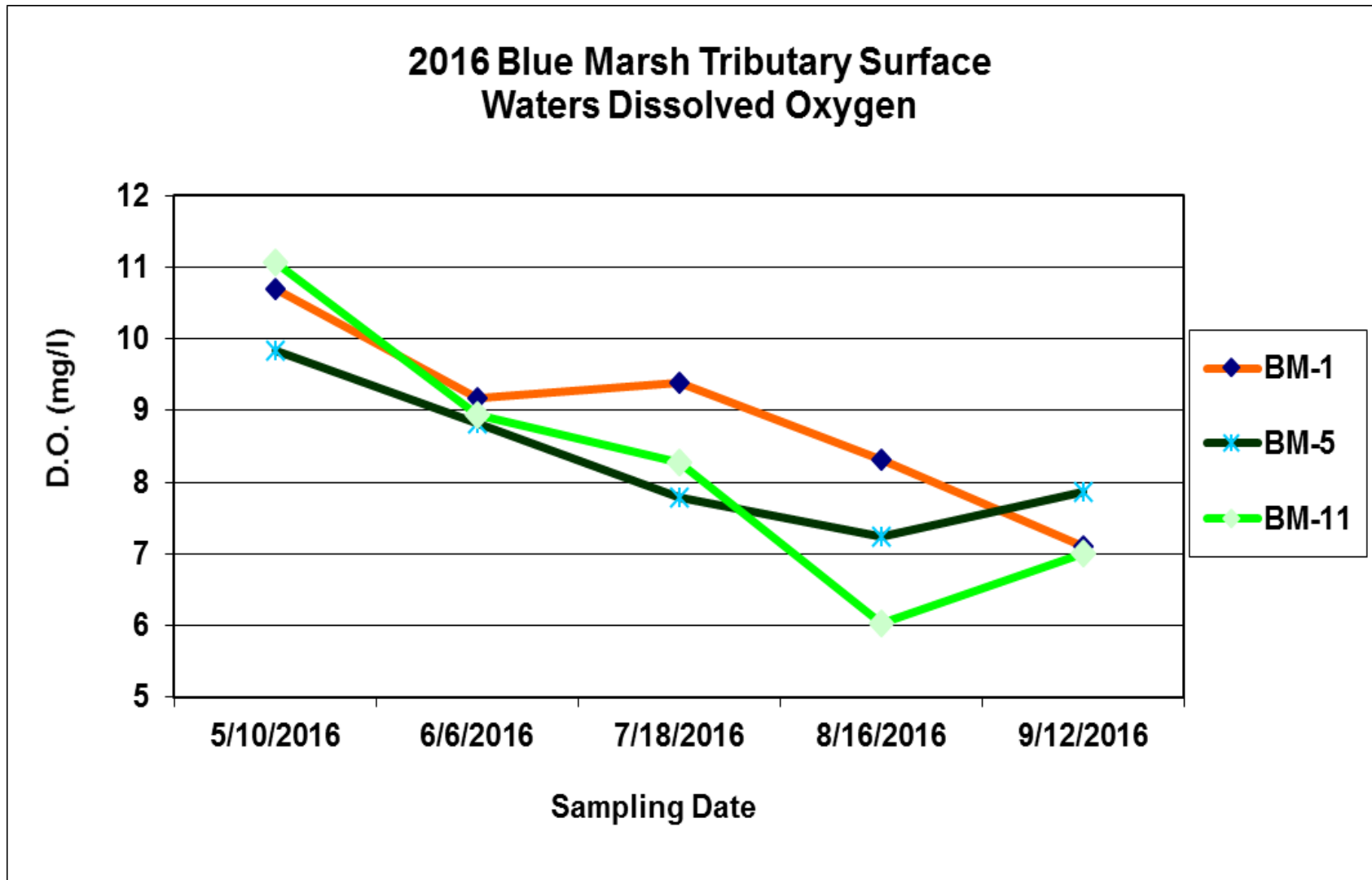


Figure 3-3. Tributary and outflow surface water dissolved oxygen concentrations measured at Blue Marsh Reservoir in 2016. (The PADEP water quality standard for DO is a minimum concentration of 5 mg/L.) See Appendix A for summary of plotted values.

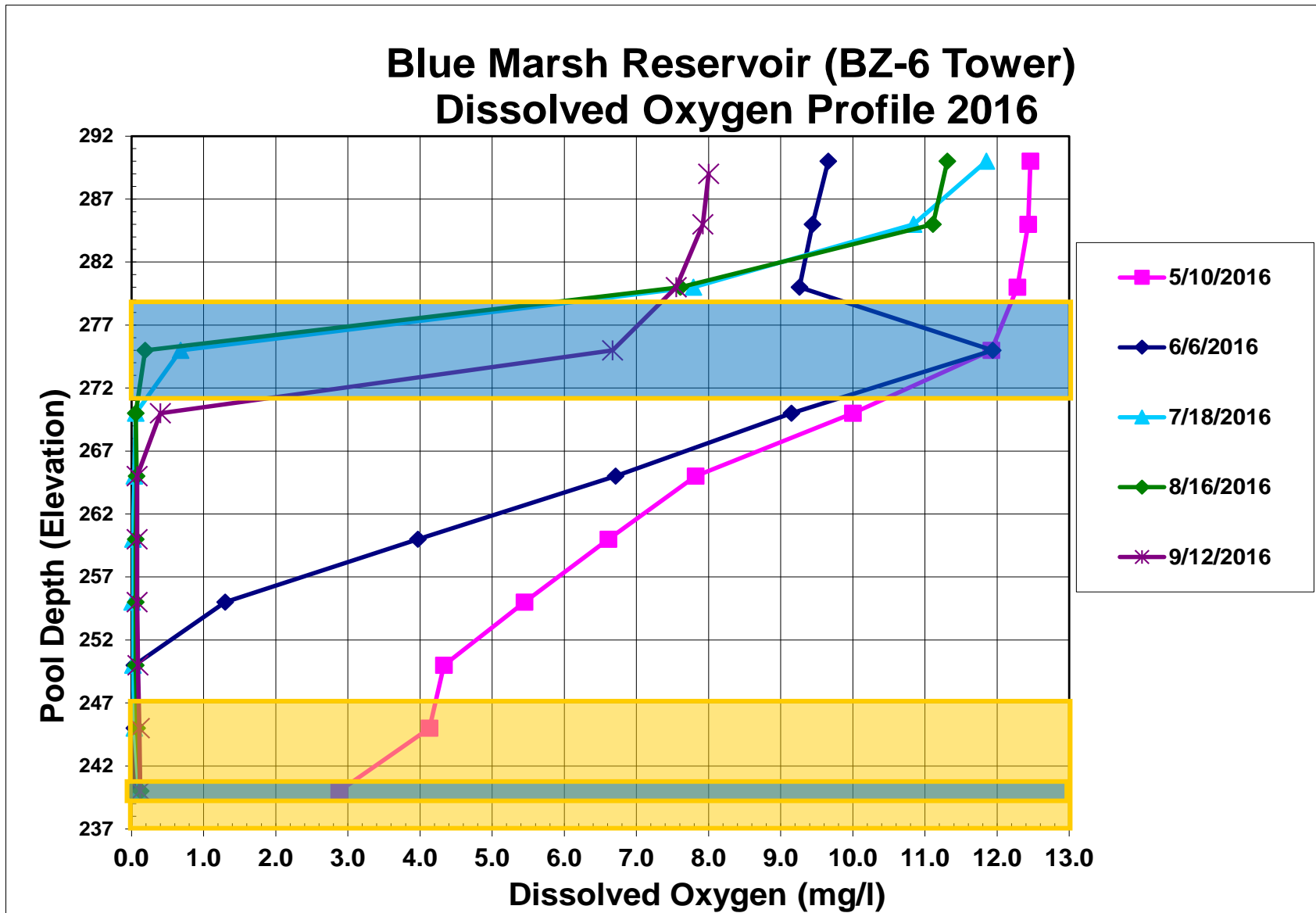


Figure 3-4. Release portal elevations and dissolved oxygen stratification at station BM-6 of Blue Marsh Reservoir in 2016. (PADEP water quality standard for DO is a minimum concentration of 5 mg/L.) See Appendix A for summary of plotted values.

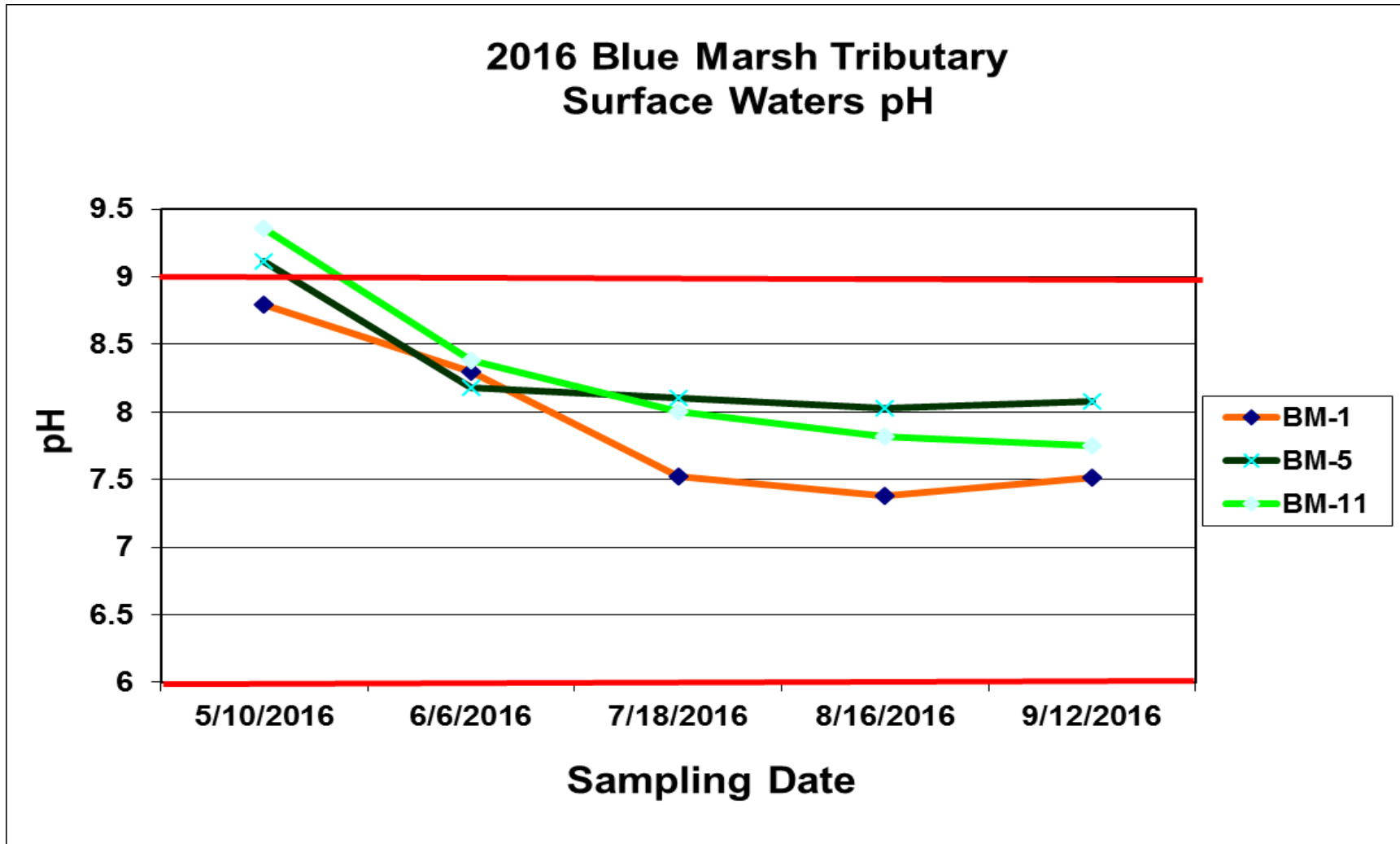


Figure 3-5. Tributary and outflow surface water pH measured at Blue Marsh Reservoir in 2016. (The PADEP water quality standard for pH is a range from 6 to 9.) See Appendix A for summary of plotted values.

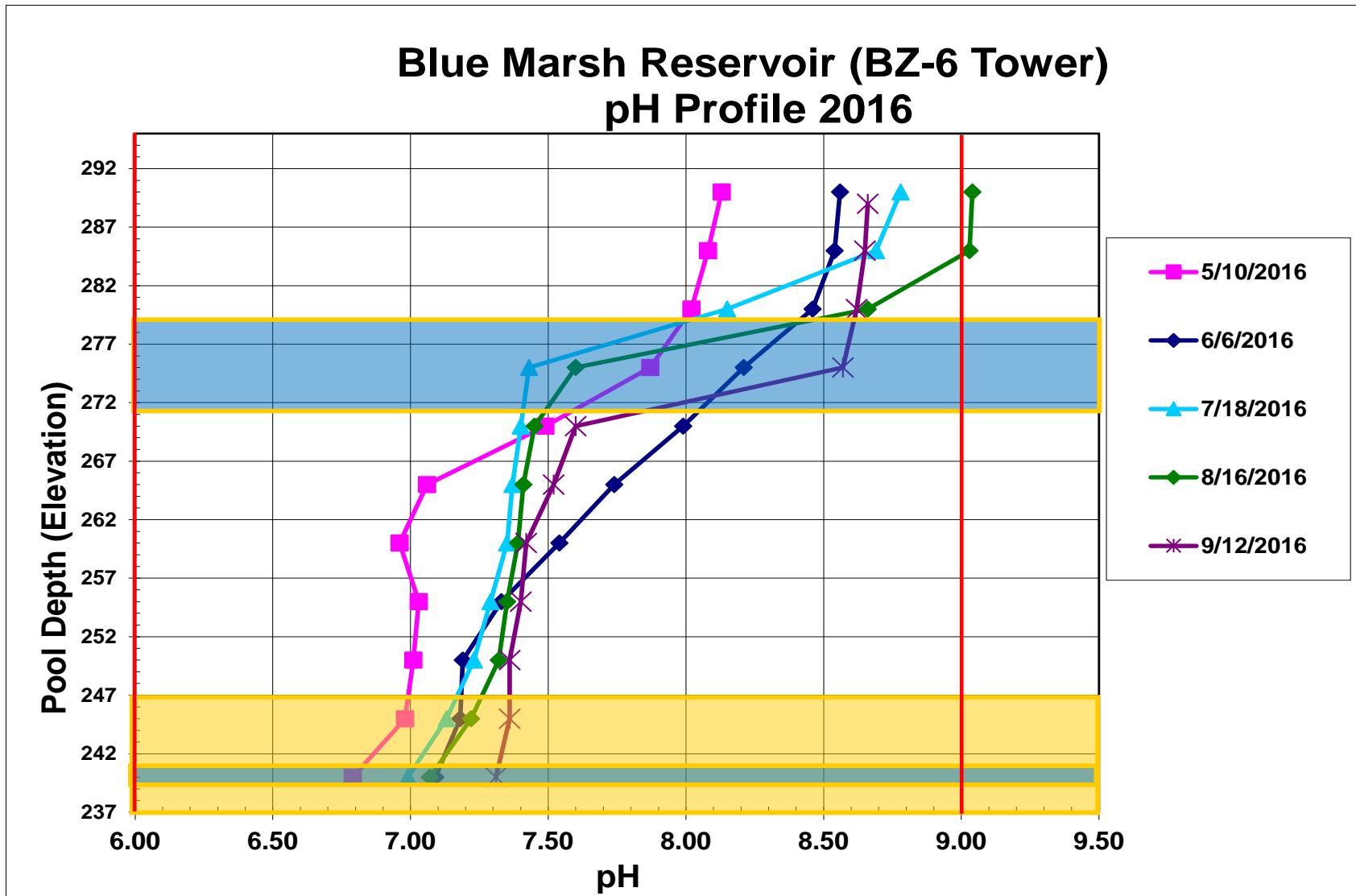


Figure 3-6. Release portal elevations and stratification of pH at station BM-6 of Blue Marsh Reservoir in 2016. (The PADEP water quality standard for pH is a range from 6 to 9.) See Appendix A for summary of plotted values.

3.2 WATER COLUMN CHEMISTRY MONITORING

The following sections describe temporal, spatial, and depth patterns for the water quality parameters measured in surface, middle, and bottom waters of Blue Marsh Reservoir during 2016 (Table 3-2).

3.2.1 Ammonia

Total Ammonia (NH₃) is a measure of the most reduced inorganic form of nitrogen in water and includes dissolved ammonia and the ammonium ion. Ammonia is a small component of the nitrogen cycle but as an essential plant nutrient, it contributes to the trophic status of a water body. Excess ammonia contributes to eutrophication of water bodies. This can result in excessive algal growths and impacts on recreation and drinking water supplies. In high concentrations, ammonia is toxic to aquatic life.

In general, ammonia remained relatively low in the waters of Blue Marsh Reservoir with upstream tributary and lake surface samples less than or slightly greater than the reporting limit (0.05 mg/L). Algal uptake in the surface waters may account for the low concentrations at these stations. Higher concentrations were seen in the middle and deep water samples at the deeper lake stations (Table 3-2). The maximum value recorded during the sampling season of 1.67 mg/L was measured in the tributary surface waters at station BM-1S on 16 August. Concentrations of ammonia measured at Blue Marsh Reservoir were in compliance with PADEP water quality standards during all of the 2016 sampling season. The state water quality standard for ammonia is dependent on temperature and pH (Table 3-1).

Ph	10 °C	15 °C	20 °C	25 °C	30 °C
6.50	25.5	17.4	12.0	8.4	5.9
6.75	23.6	16.0	11.1	7.7	5.5
7.00	20.6	14.0	9.7	6.8	4.8
7.25	16.7	11.4	7.8	5.5	3.9
7.50	12.4	8.5	5.9	4.1	2.9
7.75	8.5	5.8	4.0	2.8	2.0
8.00	5.5	5.8	4.0	2.8	2.0
8.25	3.4	2.3	1.6	1.2	0.9
8.50	2.0	1.4	1.0	0.7	0.6
8.75	1.2	0.9	0.6	0.5	0.4
9.00	0.8	0.5	0.4	0.3	0.3
9.25	0.36	0.24	0.17	0.12	0.08
9.50	0.20	0.13	0.10	0.07	0.05

Table 3-2. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-01S	5/10/2016	130	<2	<.05	<.05	<.05	4.59	0.05	217	0.58	1.8	0.06	4
	6/6/2016	123	<2	<.05	<.05	<.05	4.08	<.01	170	0.7	1.9	0.02	<3
	7/18/2016	151	<2	<.05	0.25	0.12	2.25	<.01	254	1.03	2.6	0.03	<3
	8/16/2016	184	3	0.06	1.67	0.11	0.11	0.04	273	2.61	3.3	0.07	3
	9/12/2016	123	<2	<.05	0.7	0.08	0.87	0.02	210	1.54	2.8	0.04	<3
	Mean	142	2	0.05	0.54	0.08	2.38	0.03	225	1.29	2.5	0.044	3.2
	Stdev	26	0	0.00	0.68	0.03	1.95	0.02	40	0.83	0.6	0.02	0.4
	Max	184	3	0.06	1.67	0.12	4.59	0.05	273	2.61	3.3	0.07	4
	Min	123	2	0.05	0.05	0.05	0.11	0.01	170	0.58	1.8	0.02	3
	No. of Det	5	1	1	3	3	5	3	5	5	5	5	2
BM-02S	5/10/2016	111	2	<.05	<.05	<.05	4.6	0.05	206	0.75	2.6	0.06	3
	6/6/2016	101	<2	<.05	<.05	<.05	4.17	<.01	179	0.69	3.2	0.04	<3
	7/18/2016	94	<2	<.05	<.05	<.05	2.94	<.01	205	1.07	5.6	0.01	6
	8/16/2016	84	<2	<.05	<.05	0.08	1.48	0.02	148	0.8	3.4	0.09	<3
	9/12/2016	102	2	<.05	<.05	0.14	0.97	<.01	174	0.78	2.6	0.01	4
	Mean	98	2	0.05	0.05	0.07	2.83	0.02	182	0.82	3.5	0.04	4
	Stdev	10	0	0	0	0.04	1.60	0.02	24	0.15	1.2	0.03	1
	Max	111	2	0.05	0.05	0.14	4.6	0.05	206	1.07	5.6	0.09	6
	Min	84	2	0.05	0.05	0.05	0.97	0.01	148	0.69	2.6	0.01	3
	No. of Det	5	2	0	0	2	5	2	5	5	5	5	3

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-02M	5/10/2016	117	<2	<.05	<.05	<.05	4.56	0.01	224	0.42	1.8	0.08	4
	6/6/2016	105	<2	<.05	<.05	<.05	4.39	<.01	197	0.54	1.7	0.05	<3
	7/18/2016	132	<2	0.06	0.17	<.05	3.16	<.01	247	0.73	2.2	0.06	<3
	8/16/2016	141	<2	<.05	0.53	0.05	1.35	<.01	210	1.16	2.5	<.01	<3
	9/12/2016	114	<2	<.05	0.29	0.18	1.12	<.01	200	1	2.6	0.08	<3
	Mean	122	2	0.05	0.22	0.08	2.92	0.01	216	0.77	2.2	0.06	3.2
	Stdev	14	0	0.00	0.20	0.06	1.63	0	20	0.31	0.4	0.03	0.4
	Max	141	2	0.06	0.53	0.18	4.56	0.01	247	1.16	2.6	0.08	4
	Min	105	2	0.05	0.05	0.05	1.12	0.01	197	0.42	1.7	0.01	3
No. of Det	5	0	1	3	2	5	1	5	5	5	4	1	
BM-02B	5/10/2016	120	<2	<.05	0.2	<.05	3.75	<.01	229	0.84	1.8	<.01	19
	6/6/2016	138	<2	<.05	0.14	0.06	3.01	<.01	207	0.7	1.7	0.05	3
	7/18/2016	161	4	0.05	0.69	<.05	1.29	0.01	264	1.23	2	0.06	6
	8/16/2016	173	5	<.05	1.13	0.08	0.33	0.02	231	1.85	2.2	0.1	5
	9/12/2016	139	3	0.11	0.93	0.09	0.98	<.01	244	1.83	2.5	0.15	54
	Mean	146	3	0.06	0.62	0.07	1.87	0.01	235	1.29	2.0	0.07	17
	Stdev	21	1	0.03	0.44	0.02	1.44	0.00	21	0.54	0.3	0.05	21
	Max	173	5	0.11	1.13	0.09	3.75	0.02	264	1.85	2.5	0.15	54
	Min	120	2	0.05	0.14	0.05	0.33	0.01	207	0.7	1.7	0.01	3
No. of Det	5	3	2	5	3	5	2	5	5	5	4	5	

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-05S	5/10/2016	200	<2	0.05	<.05	<.05	6.96	0.04	308	0.59	1.3	0.13	3
	6/6/2016	180	<2	0.14	<.05	<.05	6.98	0.06	310	0.76	1.8	0.18	8
	7/18/2016	154	<2	0.11	<.05	<.05	3.86	0.03	284	0.64	2.3	0.12	8
	8/16/2016	101	20	0.07	<.05	0.05	1.96	0.02	192	2.65	5.6	0.08	26
	9/12/2016	134	<2	<.05	<.05	<.05	3.33	0.03	251	0.62	3.2	0.05	4
	Mean	154	6	0.08	0.05	0.05	4.62	0.04	269	1.05	2.8	0.11	10
	Stdev	39	8	0.04	0	0	2.26	0.02	49	0.90	1.7	0.05	9
	Max	200	20	0.14	0.05	0.05	6.98	0.06	310	2.65	5.6	0.18	26
	Min	101	2	0.05	0.05	0.05	1.96	0.02	192	0.59	1.3	0.05	3
	No. of Det	5	1	4	0	1	5	5	5	5	5	5	5
BM-06S	5/10/2016	108	<2	<.05	<.05	<.05	4.64	<.01	213	0.61	2.3	<.01	4
	6/6/2016	95	<2	0.05	<.05	<.05	4.15	<.01	174	0.69	2.4	0.06	<3
	7/18/2016	86	<2	<.05	<.05	<.05	2.89	<.01	200	0.71	2.9	0.12	4
	8/16/2016	84	<2	<.05	<.05	0.08	1.56	0.02	158	0.66	2.3	<.01	<3
	9/12/2016	103	2	<.05	<.05	0.14	0.94	<.01	207	0.78	2.8	<.01	5
	Mean	95	2	0.05	0.05	0.07	2.84	0.01	190	0.69	2.5	0.04	4
	Stdev	10	0	0	0	0.04	1.60	0.00	23	0.06	0.3	0.05	1
	Max	108	2	0.05	0.05	0.14	4.64	0.02	213	0.78	2.9	0.12	5
	Min	84	2	0.05	0.05	0.05	0.94	0.01	158	0.61	2.3	0.01	3
	No. of Det	5	1	1	0	2	5	1	5	5	5	2	3

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-06M	5/10/2016	122	<2	<.05	<.05	<.05	4.76	<.01	228	0.54	1.7	0.05	4
	6/6/2016	115	<2	<.05	<.05	<.05	4.42	<.01	186	0.56	1.7	0.04	<3
	7/18/2016	144	<2	<.05	0.13	0.27	2.82	<.01	254	0.55	1.8	0.03	<3
	8/16/2016	143	<2	<.05	0.36	<.05	1.49	0.01	215	0.9	2.3	<.01	<3
	9/12/2016	129	2	<.05	0.67	<.05	0.8	<.01	238	1.22	2.5	0.02	3
	Mean	131	2	0.05	0.25	0.09	2.86	0.01	224	0.75	2.0	0.03	3
	Stdev	13	0	0	0.27	0.10	1.74	0.00	26	0.30	0.4	0.02	0
	Max	144	2	0.05	0.67	0.27	4.76	0.01	254	1.22	2.5	0.05	4
	Min	115	2	0.05	0.05	0.05	0.8	0.01	186	0.54	1.7	0.01	3
	No. of Det	5	1	0	3	1	5	1	5	5	5	4	2
BM-06B	5/10/2016	138	<2	<.05	0.21	<.05	3.96	<.01	239	0.75	1.8	0.05	6
	6/6/2016	149	<2	<.05	0.29	0.06	2.66	<.01	231	1.13	1.8	0.07	7
	7/18/2016	154	<2	<.05	0.38	0.16	2.21	<.01	251	0.82	1.8	0.02	4
	8/16/2016	162	2	<.05	0.66	0.14	0.65	0.01	228	1.37	2	<.01	<3
	9/12/2016	147	5	0.06	1.43	<.05	0.49	0.02	200	2.12	2.7	0.08	5
	Mean	150	3	0.05	0.59	0.09	1.99	0.01	230	1.24	2.0	0.05	5
	Stdev	9	1	0.00	0.50	0.05	1.45	0.00	19	0.55	0.4	0.03	2
	Max	162	5	0.06	1.43	0.16	3.96	0.02	251	2.12	2.7	0.08	7
	Min	138	2	0.05	0.21	0.05	0.49	0.01	200	0.75	1.8	0.01	3
	No. of Det	5	2	1	5	3	5	2	5	5	5	4	4

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-07S	5/10/2016	108	4	<.05	<.05	<.05	4.54	<.01	229	0.9	1.8	<.01	6
	6/6/2016	111	<2	0.16	<.05	<.05	4.17	<.01	195	0.68	2.7	0.2	<3
	7/18/2016	95	<2	<.05	<.05	<.05	2.92	<.01	211	0.99	3.2	0.02	8
	8/16/2016	86	<2	<.05	<.05	0.08	1.48	0.02	162	0.91	3	<.01	<3
	9/12/2016	101	3	<.05	<.05	0.13	1.01	<.01	170	0.89	2.6	0.02	4
	Mean	100	3	0.07	0.05	0.07	2.82	0.01	193	0.87	2.7	0.05	5
	Stdev	10	1	0.05	0	0.03	1.57	0.00	27.9	0.12	0.54	0.08	2
	Max	111	4	0.16	0.05	0.13	4.54	0.02	229	0.99	3.2	0.2	8
	Min	86	2	0.05	0.05	0.05	1.01	0.01	162	0.68	1.8	0.01	3
	No. of Det	5	2	1	0	2	5	1	5	5	5	3	3
BM-07M	5/10/2016	125	<2	<.05	<.05	<.05	4.46	<.01	223	0.52	1.8	0.12	3
	6/6/2016	123	<2	<.05	0.07	0.06	4.46	0.01	210	0.79	1.9	0.03	4
	7/18/2016	124	<2	<.05	0.2	<.05	3.18	<.01	145	0.92	2.4	0.02	5
	8/16/2016	109	<2	<.05	<.05	0.46	2.16	0.01	165	0.7	2.3	<.01	<3
	9/12/2016	100	2	<.05	0.06	0.13	1.02	<.01	181	1.13	2.4	0.06	86
	Mean	116.2	2	0.05	0.09	0.15	3.06	0.01	185	0.81	2.2	0.05	20
	Stdev	11.2	0.0	0	0.06	0.18	1.49	0.00	32.0	0.23	0.29	0.04	37
	Max	125	2	0.05	0.2	0.46	4.46	0.01	223	1.13	2.4	0.12	86
	Min	100	2	0.05	0.05	0.05	1.02	0.01	145	0.52	1.8	0.01	3
	No. of Det	5	1	0	3	3	5	2	5	5	5	4	4

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-07B	5/10/2016	127	<2	<.05	<.05	<.05	4	<.01	235	0.5	1.8	0.05	19
	6/6/2016	127	<2	0.07	0.06	<.05	4.13	<.01	224	2.6	1.7	0.15	84
	7/18/2016	175	2	<.05	0.61	<.05	2.06	<.01	267	1.21	1.9	0.03	8
	8/16/2016	138	5	0.09	1.35	<.05	0.82	0.04	212	2.49	2.8	0.08	15
	9/12/2016	121	5	0.28	0.45	0.14	1.27	0.02	216	2.41	3	0.28	838
	Mean	138	3	0.11	0.50	0.07	2.46	0.02	231	1.84	2.2	0.12	193
	Stdev	22	2	0.10	0.53	0.04	1.54	0.01	22	0.94	0.6	0.10	362
	Max	175	5	0.28	1.35	0.14	4.13	0.04	267	2.6	3	0.28	838
	Min	121	2	0.05	0.05	0.05	0.82	0.01	212	0.5	1.7	0.03	8
	No. of Det	5	3	3	4	1	5	2	5	5	5	5	5
BM-08S	5/10/2016	110	3	<.05	<.05	<.05	3.98	<.01	214	0.72	2.4	<.01	5
	6/6/2016	111	<2	0.06	<.05	<.05	3.81	<.01	191	0.73	2.4	0.06	<3
	7/18/2016	86	3	<.05	<.05	<.05	2.67	<.01	196	0.95	2.9	0.02	5
	8/16/2016	76	2	<.05	<.05	0.07	1.31	0.02	162	1.08	2.5	<.01	4
	9/12/2016	98	3	<.05	<.05	0.12	0.92	<.01	180	0.84	2.8	0.01	7
	Mean	96	2.6	0.05	0.05	0.07	2.54	0.01	189	0.86	2.6	0.02	5
	Stdev	15	0.5	0.00	0.00	0.03	1.40	0.00	19	0.15	0.2	0.02	1
	Max	111	3	0.06	0.05	0.12	3.98	0.02	214	1.08	2.9	0.06	7
	Min	76	2	0.05	0.05	0.05	0.92	0.01	162	0.72	2.4	0.01	3
	No. of Det	5	4	1	0	2	5	1	5	5	5	3	4

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-08M	5/10/2016	100	2	<.05	<.05	<.05	3.99	<.01	220	0.58	2.1	0.08	4
	6/6/2016	93	<2	0.06	<.05	<.05	3.67	<.01	200	0.87	2	0.07	<3
	7/18/2016	108	<2	0.17	0.32	<.05	2.59	0.01	236	0.96	2.2	0.17	4
	8/16/2016	68	2	<.05	<.05	0.07	1.32	0.02	158	1.02	2.4	<.01	<3
	9/12/2016	100	3	<.05	<.05	0.12	0.93	<.01	169	0.77	3.1	0.01	5
	Mean	94	2	0.08	0.10	0.07	2.50	0.01	197	0.84	2.4	0.07	3.8
	Stdev	15	0.4	0.05	0.12	0.03	1.37	0.00	33	0.17	0.4	0.07	0.8
	Max	108	3	0.17	0.32	0.12	3.99	0.02	236	1.02	3.1	0.17	5
	Min	68	2	0.05	0.05	0.05	0.93	0.01	158	0.58	2	0.01	3
	No. of Det	5	3	2	1	2	5	2	5	5	5	4	3
BM-08B	5/10/2016	95	4	<.05	<.05	<.05	3	0.02	209	1.02	2.8	0.33	397
	6/6/2016	96	<2	0.11	0.08	<.05	3.42	0.02	215	0.74	1.6	0.13	4
	7/18/2016	161	2	<.05	0.73	<.05	2.15	<.01	268	1.47	2.2	0.07	47
	8/16/2016	101	<2	<.05	0.09	0.5	1.62	0.02	202	0.84	2.2	<.01	<3
	9/12/2016	116	<2	<.05	0.44	0.12	1.07	0.01	198	1.08	2.7	0.2	8
	Mean	114	2	0.06	0.28	0.15	2.25	0.02	218	1.03	2.3	0.15	91.8
	Stdev	28	0.9	0.03	0.30	0.20	0.97	0.01	28	0.28	0.5	0.12	172
	Max	161	4	0.11	0.73	0.5	3.42	0.02	268	1.47	2.8	0.33	397
	Min	95	2	0.05	0.05	0.05	1.07	0.01	198	0.74	1.6	0.01	3
	No. of Det	5	2	1	4	2	5	4	5	5	5	4	4

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-09S	5/10/2016	127	3	<.05	<.05	<.05	4.64	<.01	239	0.76	2.3	0.02	3
	6/6/2016	128	<2	0.11	<.05	<.05	4.31	<.01	235	0.57	2.9	0.12	<3
	7/18/2016	88	2	<.05	<.05	<.05	2.75	<.01	203	0.93	3.7	0.05	5
	8/16/2016	86	2	<.05	<.05	0.08	1.42	0.02	176	0.82	2.7	<.01	4
	9/12/2016	100	2	<.05	<.05	0.12	0.95	<.01	183	0.84	3.3	0.02	5
	Mean	106	2	0.06	0.05	0.07	2.81	0.01	207	0.78	3.0	0.04	4
	Stdev	21	0	0.03	0.00	0.03	1.66	0.00	29	0.13	0.5	0.05	1
	Max	128	3	0.11	0.05	0.12	4.64	0.02	239	0.93	3.7	0.12	5
	Min	86	2	0.05	0.05	0.05	0.95	0.01	176	0.57	2.3	0.01	3
	No. of Det	5	4	1	0	2	5	1	5	5	5	4	4
BM-09M	5/10/2016	139	<2	<.05	<.05	<.05	4.64	<.01	234	0.55	2.1	0.02	<3
	6/6/2016	107	<2	0.08	<.05	<.05	4.31	<.01	235	0.7	2	0.08	<3
	7/18/2016	124	<2	<.05	0.2	<.05	2.98	<.01	237	0.76	2.5	0.02	3
	8/16/2016	90	<2	<.05	<.05	0.22	1.74	0.02	188	0.91	2.3	<.01	<3
	9/12/2016	111	<2	<.05	0.15	0.13	1.13	<.01	184	0.82	2.7	0.04	<3
	Mean	114	2	0.06	0.10	0.10	2.96	0.01	216	0.75	2.3	0.03	3
	Stdev	18	0.0	0.01	0.07	0.08	1.54	0.00	27	0.14	0.3	0.03	0.0
	Max	139	2	0.08	0.2	0.22	4.64	0.02	237	0.91	2.7	0.08	3
	Min	90	2	0.05	0.05	0.05	1.13	0.01	184	0.55	2	0.01	3
	No. of Det	5	0	1	2	2	5	1	5	5	5	4	1

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-09B	5/10/2016	134	<2	<.05	0.08	<.05	3.69	0.01	258	0.68	1.8	0.01	65
	6/6/2016	146	<2	<.05	0.13	0.05	3.45	0.02	240	0.74	1.6	0.04	3
	7/18/2016	187	7	0.09	1.28	<.05	0.49	0.02	277	1.95	2.3	0.17	16
	8/16/2016	127	3	<.05	1.02	0.06	1.41	0.04	238	1.97	2.6	<.01	17
	9/12/2016	136	<2	0.17	0.56	0.11	1.41	0.03	228	1.92	<5	0.21	98
	Mean	146	3	0.08	0.61	0.06	2.09	0.02	248	1.45	2.7	0.09	40
	Stdev	24	2	0.05	0.53	0.03	1.40	0.01	19	0.68	1.4	0.09	40
	Max	187	7	0.17	1.28	0.11	3.69	0.04	277	1.97	5	0.21	98
	Min	127	2	0.05	0.08	0.05	0.49	0.01	228	0.68	1.6	0.01	3
	No. of Det	5	2	2	5	3	5	5	5	5	4	4	5
BM-10S	5/10/2016	118	<2	<.05	<.05	<.05	4.77	0.03	223	0.58	2.2	0.04	8
	6/6/2016	139	<2	<.05	<.05	<.05	4.42	<.01	226	0.82	2.6	0.04	3
	7/18/2016	87	5	<.05	<.05	<.05	2.43	<.01	191	1.14	4	0.05	9
	8/16/2016	70	4	<.05	<.05	0.06	1	0.02	165	1.44	3.3	<.01	3
	9/12/2016	104	4	<.05	<.05	0.11	1.14	<.01	196	1.17	2.9	0.03	9
	Mean	104	3	0.05	0.05	0.06	2.75	0.02	200	1.03	3.0	0.03	6
	Stdev	27	1	0.00	0.00	0.03	1.78	0.01	25	0.33	0.7	0.02	3
	Max	139	5	0.05	0.05	0.11	4.77	0.03	226	1.44	4	0.05	9
	Min	70	2	0.05	0.05	0.05	1	0.01	165	0.58	2.2	0.01	3
	No. of Det	5	3	0	0	2	5	2	5	5	5	4	5

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-10M	5/10/2016	107	<2	0.05	<.05	<.05	4.75	0.04	219	0.84	2.2	0.26	247
	6/6/2016	123	<2	0.05	<.05	0.05	4.23	<.01	214	0.79	2	0.05	<3
	7/18/2016	98	3	<.05	0.13	<.05	2.64	<.01	215	1.17	2.7	0.05	8
	8/16/2016	66	4	<.05	<.05	0.06	1.06	0.02	145	1.47	3	<.01	4
	9/12/2016	105	3	<.05	<.05	0.09	1.23	<.01	187	1.2	2.8	0.03	11
	Mean	100	3	0.05	0.07	0.06	2.78	0.02	196	1.09	2.5	0.08	55
	Stdev	21	1	0	0.04	0.02	1.69	0.01	31	0.28	0.4	0.10	108
	Max	123	4	0.05	0.13	0.09	4.75	0.04	219	1.47	3	0.26	247
	Min	66	2	0.05	0.05	0.05	1.06	0.01	145	0.79	2	0.01	3
	No. of Det	5	3	2	1	3	5	2	5	5	5	4	4
BM-10B	5/10/2016	114	5	0.09	0.13	<.05	3.77	0.06	231	3.65	3.8	0.46	824
	6/6/2016	152	<2	0.08	0.28	0.12	3.48	0.02	251	1.33	1.7	0.09	56
	7/18/2016	179	2	0.08	0.8	<.05	3.18	0.03	303	1.71	2.3	0.1	111
	8/16/2016	140	<2	<.05	0.26	<.05	3.37	0.03	244	1.35	2.6	0.05	64
	9/12/2016	146	<2	<.05	0.34	0.07	2.37	0.03	249	1.28	2.4	0.06	41
	Mean	146	3	0.07	0.36	0.07	3.23	0.03	256	1.86	2.6	0.15	219
	Stdev	23	1	0.02	0.26	0.03	0.53	0.02	28	1.01	0.8	0.17	339
	Max	179	5	0.09	0.8	0.12	3.77	0.06	303	3.65	3.8	0.46	824
	Min	114	2	0.05	0.13	0.05	2.37	0.02	231	1.28	1.7	0.05	41
	No. of Det	5	2	3	5	2	5	5	5	5	5	5	5

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Blue Marsh Reservoir in 2016

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BM-11S	5/10/2016	32	<2	<.05	<.05	<.05	3.1	0.02	103	0.46	1.9	0.03	3
	6/6/2016	141	<2	0.07	<.05	<.05	4.95	0.04	232	0.68	2.5	0.08	12
	7/18/2016	163	<2	0.11	<.05	<.05	4.09	0.05	269	0.35	2.1	0.12	7
	8/16/2016	101	27	<.05	<.05	<.05	2.25	0.03	202	3.21	6	0.11	42
	9/12/2016	108	<2	0.05	<.05	<.05	2.78	0.03	222	0.62	3.5	0.06	9
	Mean	109	7	0.07	0.05	0.05	3.43	0.03	206	1.06	3.2	0.08	15
	Stdev	50	11	0.03	0.00	0.00	1.08	0.01	62	1.21	1.7	0.04	16
	Max	163	27	0.11	0.05	0.05	4.95	0.05	269	3.21	6	0.12	42
	Min	32	2	0.05	0.05	0.05	2.25	0.02	103	0.35	1.9	0.03	3
	No. of Det	5	1	3	0	0	5	5	5	5	5	5	5

3.2.2 Nitrite and Nitrate

Nitrite (NO₂) is a measure of a form of nitrogen that occurs as an intermediate in the nitrogen cycle. It is unstable and can rapidly be oxidized to nitrate or reduced to nitrogen gas. Nitrite is a source of nutrients for plants and can be toxic to aquatic life in relatively low concentrations. Nitrite concentrations were low at Blue Marsh Reservoir during 2016 (Table 3-1). Concentrations ranged from less than the reporting limit of 0.05 mg/L to 0.50 mg/L during the sampling season.

Nitrate (NO₃) is the measure of the most oxidized and stable form of nitrogen. It is the principal form of combined nitrogen in natural waters. Nitrate is the primary form of nitrogen used by plants as a nutrient to stimulate plant growth. Nitrate concentrations maintained similar seasonal patterns across all stations in Blue Marsh Reservoir in 2016. Consistently higher concentrations were measured at upstream tributary stations BM-5S and BM-11S (Table 3-1). Concentrations at all sampling locations and depths ranged from 0.11 to 6.98 mg/L. Seasonal mean concentrations at surface tributary stations BM-5S (4.62 mg/L) and BM-11S (3.43 mg/L) maintained the highest concentrations of all stations and dates sampled. It appears that the elevated nitrate concentrations at these stations are originating from somewhere in the Tulpehocken Creek watershed.

Concentrations of nitrate and nitrite measured at Blue Marsh Reservoir were in compliance with PADEP water quality standards during 2016. The state water quality standard for nitrogen from nitrite and nitrate sources is a summed concentration of not more than 10 mg/L. Summed concentrations at all stations were less than the State standard. The highest nitrogen summed concentration of 7.03 mg/L occurred in the surface waters at station BM-5S on 6 June.

3.2.3 Total Kjeldahl Nitrogen

Total Kjeldahl nitrogen (TKN) is a measure of organic nitrogen that is inclusive of ammonia. Organic nitrogen is not immediately available for biological activity and is therefore not available for plant growth until decomposition to inorganic form occurs. In general, TKN remained low but variable throughout the water column of Blue Marsh Reservoir in 2016 (Table 3-1). Concentrations measured at all stations and depths of the reservoir and tributaries ranged from 0.42 mg/L to 3.65 mg/L. Higher readings were typically seen in the deeper waters of the reservoir.

3.2.4 Total Phosphorus

Total phosphorus (TP) is a measure of both organic and inorganic forms of phosphorus. It is an essential plant nutrient and is often the most limiting nutrient to plant growth in freshwater systems. Inputs of phosphorus are the prime contributing factors to eutrophication in most freshwater systems. Phosphorus bound to bottom sediments in lakes can be released when oxygen levels are depleted in bottom waters. This phosphorus then becomes available for plant growth.

EPA guidance for nutrient criteria in lakes and reservoirs suggests a maximum concentration for total phosphorus of 0.01-mg/L (EPA 2000). Lakes and reservoirs exceeding this concentration are more likely to experience algal bloom problems during the growing season. Total phosphorus in the watershed and lake body of Blue Marsh Reservoir was frequently measured at concentrations well above this standard during 2016 (Table 3-1). Bottom and mid-depth waters within the lake routinely had the highest measured concentrations. This may be a direct result of phosphorus release from bottom sediments during anoxic conditions experienced at Blue Marsh annually. In 2016, only 21 of the 105 samples measured for total phosphorus at Blue Marsh Reservoir, including its tributaries, were less than the EPA guideline. The single sample values for all stations and depths ranged from 0.46 mg/L to <0.01 mg/L. Agriculture and other land use found in the watershed contribute to the historic and currently measured elevated total phosphorus levels in Blue Marsh reservoir.

3.2.5 Total Dissolved Phosphorus

Total dissolved phosphorus (DISS P) in the water column of Blue Marsh Reservoir was consistently low during 2016. Twenty Four out of the 105 samples collected during the sampling season were greater than the laboratory reporting limit of 0.05 mg/L (Table 3-1). The single sample values for all stations and depths ranged from 0.28 mg/L to <0.05 mg/L. Most stations showed their highest readings during the June and July sampling periods.

3.2.6 Dissolved Phosphate

Orthophosphate (PO₄) is a measure of the inorganic oxidized form of soluble phosphorus. This form of phosphorus is the most readily available for uptake during photosynthesis. In freshwater environments, dissolved phosphate is usually a limiting nutrient and is readily taken up by freshwater plants and algae. Dissolved phosphate in the lake waters of Blue Marsh Reservoir were low during 2016 (Table 3-1) with the majority of higher sample results occurring in the upstream tributary waters of the reservoir. Algal uptake during photosynthesis likely contributed to lower concentrations in lake waters. The single sample values for all stations and depths ranged from 0.06 mg/L to <0.01 mg/L (laboratory reporting limit).

3.2.7 Total Dissolved Solids

Total dissolved solids (TDS) are a measure of the amount of non-filterable dissolved material in the water. Dissolved salts such as sulfate, magnesium, chloride, and sodium contribute to elevated levels. Total dissolved solids (TDS) in the water column of Blue Marsh Reservoir at all stations and depths ranged from 310 mg/L to 103 mg/L in 2016 (Table 3-1). Upstream tributary station BM-5S had the highest single sample concentration of 310 mg/L on 6 June and the highest sampling station seasonal mean of 269 mg/L. The state water quality standard for TDS is a maximum concentration of 500 mg/L. Concentrations of total dissolved solids measured at Blue Marsh Reservoir did not exceed the PADEP water quality standard during 2016.

3.2.8 Total Suspended Solids

Total suspended solids (TSS) are a measure of the amount of filterable particulate matter that is suspended within the water column. High concentrations increase the turbidity of the water and can hinder photosynthetic activity, result in damage to fish gills, and cause impairment to spawning habitat (smothering). Total suspended solids in the waters of Blue Marsh Reservoir were generally low during the 2016 sampling period (Table 3-1). Sample results at all stations and depths ranged from 838 mg/L to <3 mg/L (laboratory reporting limit). The maximum and consistently higher TSS readings were taken in the bottom water samples at reservoir deep water sampling locations. Five of the six results that exceeded 100 mg/L were measured in bottom water samples. Uncharacteristically high single sample readings from bottom water samples can be attributed to sample collection error. On occasion, bottom sediments are re-suspended during the sample collection process and are inadvertently included in the sample. Nearly all the elevated sample results occurred at bottom water sampling stations and likely were associated with sediment disturbance. The Pennsylvania Department of Environmental Protection (PADEP) has not issued a water quality standard for TSS.

3.2.9 Biochemical Oxygen Demand

Five-day biochemical oxygen demand (BOD) is a measure of the oxygen-depleting burden imposed by organic material present in water. It measures the rate of oxygen uptake by organisms in the water sample over a period of time. It is an indicator of the quality of a water body and the degree of pollution by biodegradable organic matter can therefore be inferred. The five-day biochemical oxygen demand and commonly accepted water quality inferences are as follows:

- 1-2 mg/L is associated with very clean water and little biodegradable wastes;
- 3-5 mg/L is associated with moderately clean water with some biodegradable wastes;
- 6-9 mg/L is associated with fairly polluted water, many bacteria, and much biodegradable wastes;
- 10+ mg/L is associated with very polluted water and large amounts of biodegradable wastes.

BOD in the water column of Blue Marsh Reservoir, for the most part, was relatively low during the 2016 sampling period (Table 3-1) with many concentrations less than the laboratory reporting limit of 2.0 mg/L. The BOD at all monitoring stations and depths ranged from <2.0 mg/L to 27.0 mg/L for the sampling period. Nine of the 105 samples collected were ≥ 5.0 mg/L with the remaining 96 samples within the <2 mg/L to 4.0 mg/L range. In holistically analyzing the BOD results from 2016 and considering the rarity of elevated levels, it is inferred that upstream tributaries of the reservoir remained very clean with little biodegradable waste throughout the sampling season and elevated readings being seen during a precipitation runoff event in August. It is also inferred that Blue Marsh Reservoir ranges from very clean with little biodegradable wastes in spring and early summer with a transition to moderately clean waters with some biodegradable wastes in late summer and fall. The Pennsylvania Department of Environmental Protection (PADEP) does not issue a water quality standard for BOD.

3.2.10 Alkalinity

Alkalinity is a measure of the acid-neutralizing capacity of water. Waters that have high alkalinity values are considered undesirable because of excessive hardness and high concentrations of sodium salts. Water with low alkalinity has little capacity to buffer acidic inputs and is susceptible to acidification (low pH). The PADEP standard is a minimum concentration of 20-mg/L CaCO_3 except where natural conditions are less.

Throughout the monitoring period in 2016, concentrations at all stations and depths for Blue Marsh Reservoir ranged from 32 mg/L CaCO_3 to 200 mg/L CaCO_3 (Table 3-1). Upstream tributary station BM-5S maintained the highest seasonal mean concentration of 154 mg/L CaCO_3 . Whereas, upstream tributary station BM-8M maintained the lowest seasonal mean concentration of 94 mg/L CaCO_3 . Concentrations of alkalinity measured at Blue Marsh Reservoir were in compliance with PADEP water quality standards for all samples collected during 2016.

3.2.11 Total Organic Carbon

Total organic carbon (TOC) is a measurement of the amount of dissolved and particulate carbon that is bound in organic compounds. TOC can be derived from decaying vegetation, bacterial growth, and metabolic activities of living organisms. The bulk of organic carbon in water is composed of humic substances and partly degraded animal and plant materials. Other sources of TOC can include agricultural chemicals such as herbicides and insecticides and also wastewater treatment plants. The amount of carbon in a freshwater stream is an indicator of the organic character of a water body. High organic content can increase the growth of microorganisms which contribute to the depletion of oxygen. Total organic carbon concentrations in the water column and tributaries of Blue Marsh Reservoir were low during 2016 (Table 3-1). Concentrations of TOC at all stations and depths ranged from 1.3 mg/L to 5.6 mg/L.

3.2.12 Chlorophyll a

Chlorophyll a is the measure of the plant chlorophyll "a" primary pigment which helps plants get energy from light. It is found in most plants, algae, and cyanobacteria. Chlorophyll a measures increase in relation to algal densities in a water body. Chlorophyll a is used as a measure of algal biomass. Chlorophyll a was not measured in the months of May and June as a result of sensor equipment failure. In 2016, the average concentration during the monitoring period for lake surface waters (<15 feet) at lake station BM-6 was 5.49 ug/L with the highest concentrations seen during the month of Septmeber (Appendix A). For all reservoir sampling stations, a maximum concentration of 13.8 ug/L was measured in the surface waters at lake station BM-8 in September and the minimum concentration of 0.1 ug/L was measured at the upstream surface water station BM-5S in late June. Algal productivity in tributary waters would be expected to be less than lake surface waters as a result of thermal warming, longer lake water residence time, and increased nutrient concentrations and availability.

3.3 TROPIC STATE DETERMINATION

Carlson’s (1977) trophic state index (TSI) is a method of quantitatively expressing the magnitude of eutrophication for a lake. The trophic state analysis calculates separate indices for eutrophication based on measures of total phosphorus, chlorophyll *a*, and secchi disk depth. Index values for each parameter range on the same scale from 0 (least enriched) to 100 (most enriched). The resulting indices can also be compared to qualitative threshold values that correspond to levels of eutrophication: oligotrophic (TSI <40), mesotrophic (TSI >40), and eutrophic (TSI >50).

During 2016, TSI’s calculated for measures of secchi disk depth classified Blue Marsh Reservoir as eutrophic in May (52.96), June (49.66), July (51.53), August (56.78) and September (58.63) (Fig. 3-7). TSI’s calculated for measures of total phosphorus classified Blue Marsh Reservoir as eutrophic in June (63.19) and July (73.19), and oligotrophic in May (37.35), August (37.35) and September (37.35). TSI’s calculated for measures of chlorophyll *a* classified Blue Marsh Reservoir as mesotrophic in July (45.51) and August (40.34), and eutrophic in September (51.79). Field equipment sensor failure prevented collection of Chlorophyll *a* data in the months of May and June. Carlson (1977) warned against averaging TSI values estimated for different parameters, and instead suggested giving priority to chlorophyll *a* in the summer and to phosphorus in the spring, fall, and winter. With this in mind, the trophic state of the reservoir fluctuated between being mesotrophic and eutrophic at different points in time during the sampling season.

The EPA (1983) also provides criteria for defining the trophic conditions of lakes of the North Temperate Zone based on concentrations of total phosphorus, chlorophyll *a*, and secchi depth (Table 3-3). Based on these ranges of classification, Blue Marsh Reservoir fluctuated between being mesotrophic and eutrophic at different points in time during the 2016 sampling season

Table 3-3. EPA trophic classification criteria and average monthly measures for Blue Marsh Reservoir in 2016. “EF”- Equipment Failure

Water Quality Variable	Oligo-trophic	Meso-trophic	Eutrophic	10 May	06 June	18 July	16 August	12 September
Total phos. (ppb)	<10	10-20	>20	<10	60	120	<10	<10
Chlorophyll (ppb)	<4	4-10	>10	EF	EF	4.57	2.7	8.67
Secchi depth (m)	>4	2-4	<2	1.63	2.05	1.8	1.25	1.1

3.4 RESERVOIR COLIFORM BACTERIA MONITORING

Two forms of coliform bacteria contamination were monitored in the tributary and lake surface waters at Blue Marsh Reservoir during 2016 including total and fecal coliform (Table 3-4). Total coliform includes *escherichia coliform* (*E. coli*) and related bacteria that are associated with fecal discharges. Fecal coliform bacteria are a subgroup of the total coliform and are normally associated with waste derived from human and other warm-blooded animals and indicate the presence of fecal contamination but not the associated risk.

Total coliform contamination of Blue Marsh Reservoir was relatively high at most stations during the 2016 monitoring period and exceeded the sample detection limit of 2400 colonies/100-ml on 22 occasions throughout the sampling season. Upstream tributary stations BM-5S and BM-11S routinely exceeded the detection limit. Total coliform values for all stations ranged from 44 colonies/100-ml to greater than the detection limit of 2400 colonies/100-ml. Bacteria in natural waters are common and their presence in the sample is not necessarily a human health concern. No State or federal standards exist for total coliform for water contact recreation.

The PADEP standard for fecal coliform bacteria during the swimming season (from 1 May to 30 September) is a geometric mean not greater than 200 colonies/100-ml calculated for not less than five fecal coliform samples collected over a consecutive thirty day period. Given that our regular monitoring was completed on one day as grab samples, single sample results were then compared to the Pennsylvania Department of Health single sample standard of <1000 colonies/100-ml. Fecal coliform contamination in surface waters of Blue Marsh Reservoir during 2016 ranged from less than the 2 clns/100-ml detection limit to a high of 6,400 clns/100-ml. Elevated bacteria readings were routinely seen in upstream tributary surface waters at stations BM-11S and BM-5S. The fecal coliform samples collected at Blue Marsh Reservoir did exceed the State single sample standard in 2016 on 4 occasions. Elevated counts at stations BM-5S and BM-11S are likely attributed to agricultural activities in those upstream watersheds. Water contact recreation, such as water skiing, is permitted at Blue Marsh Reservoir. The Corps recreational swimming beach is monitored and managed separately from the monthly routine lake water quality sampling (see Section 3.5).

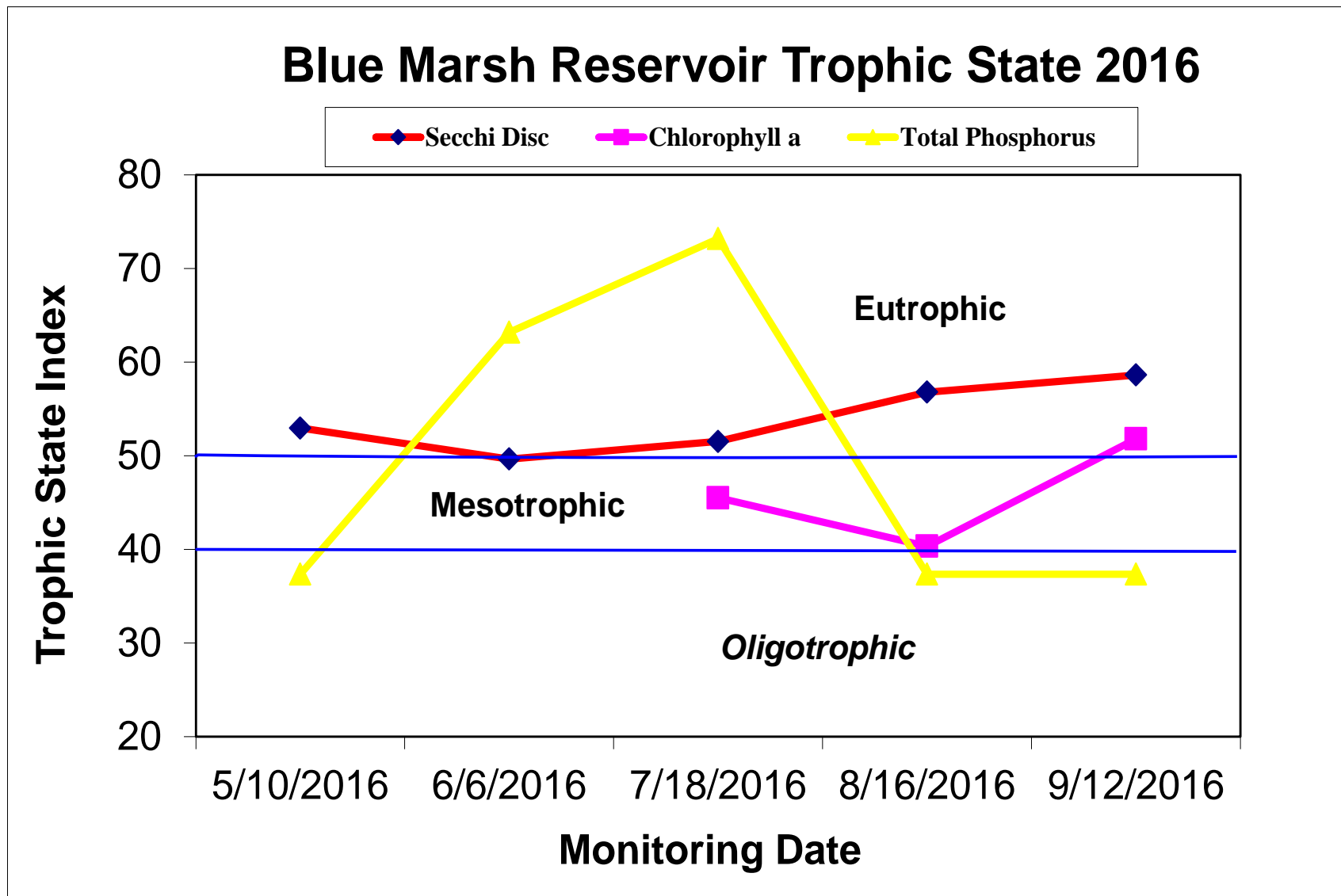


Figure 3-7. Trophic state indices calculated from secchi disk depth and concentrations of total phosphorus and chlorophyll *a* at Blue Marsh Reservoir in 2016.

Results and Discussion

Table 3-4. Bacteria counts (colonies/100 ml) at Blue Marsh Reservoir during 2016. Shaded values exceed the Pennsylvania Department of Health water quality standard for bathing beach of 1,000 fecal coliform colonies/100-ml. NS = Not Sampled in 2016

STATION	DATE	Total Coliform	Fecal Coliform (FC)	Escherichia coli		
BM-1S	5/10/16		75	2	NS	
	6/6/16	>	2400	5	NS	
	7/18/16	>	2400	6	NS	
	8/16/16	>	2400	6	NS	
	9/12/16		580	10	NS	
BM-2S	5/10/16		65	<	2	NS
	6/6/16		200		2	NS
	7/18/16	>	2400		3	NS
	8/16/16		190		2	NS
	9/12/16		240	<	2	NS
BM-5S	5/10/16	>	2400		280	NS
	6/6/16	>	2400		2600	NS
	7/18/16	>	2400		88	NS
	8/16/16	>	2400		110	NS
	9/12/16	>	2400		2700	NS
BM-6S	5/10/16		44	<	2	NS
	6/6/16		200		5	NS
	7/18/16	>	2400		3	NS
	8/16/16		730		2	NS
	9/12/16	>	2400		3	NS
BM-7S	5/10/16		140	<	2	NS
	6/6/16		410		5	NS
	7/18/16	>	2400		2	NS
	8/16/16		1600	<	2	NS
	9/12/16		770		2	NS
BM-8S	5/10/16		280		15	NS
	6/6/16		550		2	NS
	7/18/16	>	2400	<	2	NS
	8/16/16	>	2400	<	2	NS
	9/12/16		490	<	2	NS
BM-9S	5/10/16		290		20	NS
	6/6/16		390		8	NS
	7/18/16	>	2400		2	NS
	8/16/16		1700	<	2	NS
	9/12/16		870	<	2	NS
BM-10S	5/10/16	>	2400		380	NS
	6/6/16		1100		8	NS
	7/18/16	>	2400	<	2	NS
	8/16/16		340	<	2	NS
	9/12/16	>	2400		290	NS
BM-11S	5/10/16		2000		250	NS
	6/6/16	>	2400		6400	NS
	7/18/16	>	2400		130	NS
	8/16/16	>	2400		200	NS
	9/12/16	>	2400		3100	NS

3.5 WEEKLY SWIMMING BEACH BACTERIA MONITORING

Weekly coliform bacteria monitoring was conducted at the public swimming beach of the Dry Brooks Day Use Area of Blue Marsh Reservoir to gauge compliance with Pennsylvania Department of Health bathing beach water quality standards to ensure public safety in this water contact recreation area. The bathing beach contamination standard, like the PADEP swimming season water quality standard, is based on a geometric mean of less than 200 colonies/100-ml for five samples collected over not more than a 30 consecutive day period, but also stipulates that no single sample should exceed 1,000 fecal coliform colonies/100-ml. Samples for coliform analysis were collected twice weekly from 3 fixed stations on each date in the regulated swimming area. During 2016, fecal coliform contamination at the swimming beach area of Blue Marsh Reservoir never exceeded the State single sample or geometric mean fecal criteria (Table 3-5).

Escherichia coli (E. coli) was monitored at the swimming beach to better understand bacteria trends. E. coli is the most reliable indicator of fecal bacterial contamination of surface waters in the United States according to water quality standards set by the EPA (2000). The EPA recommendation for recreational water quality standard for E. coli is based on two criteria: a geometric mean of 126 organisms/ 100 ml (geometric mean) threshold and 235 organisms/ 100 ml (single water sample) threshold. *Escherichia coli* measures never exceeded the EPA geometric mean standard but did exceed the single sample standard on three occasions at the Blue Marsh Reservoir swimming beach area in 2016. Additional samples were collected on and after these occasions to insure there was no danger to the users of the recreational beach area.

Table 3-5. Single sample Maximum counts and 5-day running fecal coliform geometric means at the three swimming beach stations of Blue Marsh Reservoir in 2016. Shaded values indicate results were not in compliance with PA Dep. of Health water quality standards for bathing beaches: maximum count greater than 1,000 colonies/100-ml; 5-day geometric mean greater than 200 colonies/100-ml.

Week	Date	Single Maximum Count	5-Day Geometric Means		
			sb1	sb2	sb3
Week 1	09-May	10.00	-	-	-
	12-May	5.00	-	-	-
Week 2	16-May	5.00	-	-	-
	19-May	20.00	-	-	-
Week 3	23-May	6.00	3.98	4.16	4.13
	26-May	2.00	3.31	3.47	2.99
Week 4	31-May	50.00	6.79	5.49	5.42
	02-June	18.00	10.53	5.70	7.48
Week 5	06-June	42.00	12.22	7.52	10.97
	09-June	6.00	11.03	9.03	10.97
Week 6	13-June	18.00	15.22	14.01	16.63
	16-June	10.00	11.78	10.16	11.44
Week 7	20-June	23.00	9.46	8.84	13.51
	23-June	5.00	5.58	6.05	9.21
Week 8	27-June	31.00	8.90	8.06	9.75
	30-June	3.00	6.99	5.19	6.44
Week 9	05-July	11.00	7.13	4.52	6.44
	07-July	2.00	5.72	4.17	3.95
Week 10	11-July	10.00	6.57	4.17	4.54
	14-July	5.00	4.12	2.83	4.13
Week 11	18-July	28.00	6.44	3.39	4.96
	21-July	5.00	5.50	3.39	3.98
Week 12	25-July	58.00	8.34	6.65	5.79
	28-July	640.00	9.24	8.63	13.30
Week 13	01-August	13.00	11.24	9.56	16.10
	04-August	15.00	9.64	11.91	20.06
Week 14	08-August	44.00	13.88	15.38	37.22
	11-August	120.00	16.05	14.28	58.05
Week 15	15-August	98.00	14.49	22.12	22.81
	18-August	290.00	29.71	41.76	41.85
	20-August	62.00	40.60	39.25	33.59
Week 16	22-August	970.00	45.70	65.89	62.36
	24-August	840.00	54.28	98.59	92.03
	25-August	96.00	87.68	98.18	151.27
Week 17	29-August	340.00	70.87	98.18	158.40
	01-September	200.00	89.57	175.37	293.93

Results and Discussion

Table 3-6. Maximum counts and 5-day e-coli running geometric means of the three swimming beach stations of Blue Marsh Reservoir in 2016. Shaded values indicate results were not in compliance with PA Dep. of Health water quality standards for E-coli levels at bathing beaches: maximum single count greater than 235 colonies/100-ml; 5-day geometric mean greater than 126 colonies/100-ml.

Week	Date	Single Maximum Count	5-Day Geometric Means		
			sb1	sb2	sb3
Week 1	09-May	6.00	-	-	-
	12-May	4.00	-	-	-
Week 2	16-May	2.00	-	-	-
	19-May	16.00	-	-	-
Week 3	23-May	5.00	3.17	3.31	2.46
	26-May	1.00	2.40	2.40	1.72
Week 4	31-May	46.00	4.71	3.92	3.48
	02-June	16.00	8.20	3.92	4.33
Week 5	06-June	37.00	9.70	4.88	6.96
	09-June	3.00	8.08	5.29	6.28
Week 6	13-June	14.00	10.06	8.97	10.15
	16-June	9.00	7.34	6.47	7.17
Week 7	20-June	11.00	6.03	7.02	9.30
	23-June	4.00	3.37	4.69	6.14
Week 8	27-June	28.00	5.71	6.08	7.27
	30-June	1.00	4.58	3.59	4.50
Week 9	05-July	8.00	4.85	2.66	4.15
	07-July	1.00	3.39	2.13	2.57
Week 10	11-July	3.00	3.39	2.13	2.43
	14-July	2.00	1.74	1.32	1.89
Week 11	18-July	20.00	3.17	1.52	2.17
	21-July	3.00	2.61	1.32	1.89
Week 12	25-July	13.00	4.13	2.20	3.15
	28-July	580.00	5.30	3.10	9.04
Week 13	01-August	10.00	6.61	4.09	12.47
	04-August	11.00	5.19	5.75	16.02
Week 14	08-August	26.00	6.32	8.23	26.76
	11-August	47.00	7.33	8.68	34.60
Week 15	15-August	96.00	4.97	13.39	12.79
	18-August	260.00	12.13	23.32	23.73
	20-August	34.00	17.15	20.66	20.03
Week 16	22-August	870.00	17.94	42.45	40.42
	24-August	220.00	23.01	68.05	55.04
	25-August	52.00	46.59	60.20	83.43
Week 17	29-August	80.00	27.00	51.03	68.15
	01-September	190.00	37.25	101.84	127.95

4.0 REFERENCES

American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1992, Standard Methods for the Examination of Water and Wastewater (18th Ed.): Washington, D.C., American Public Health Association.

Carlson, R.E. 1977, A trophic state index for lakes, Limnology and Oceanography 22:361-369.

McComas, Steve, 1993, Lake Smarts, the First Lake Maintenance Handbook, Terrene Institute.

Pennsylvania Code, Title 25, Environmental Resources, Chapter 93 Water Quality Standards, Department of Environmental Resources, Bureau of Water Quality Management, Division of Assessment and Standards, 2001, Harrisburg, Pennsylvania.

Pennsylvania Code, Title 25, Environmental Resources, Chapter 93 Water Quality Standards, Department of Environmental Resources, Bureau of Water Quality Management, Division of Assessment and Standards, 1984, Harrisburg, Pennsylvania.

U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983 and subsequent revisions, Environmental Protection Agency Washington, DC.

U.S. Environmental Protection Agency, 1983, Technical Guidance Manual for Performing Waste Load Allocations. Book 4 Lakes and Impoundments. Chapter 2 Nutrient/Eutrophication Impacts. U.S. Environmental Protection Agency Washington, DC.

U.S. Environmental Protection Agency, 1986, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods-SW846 (3rd Ed.), November 1986 and updates.

U.S. Environmental Protection Agency, 2000, Nutrient Criteria Technical Guidance Manual for Lakes and Reservoirs, EPA-822-B00-001, U.S. Environmental Protection Agency Washington, DC.

APPENDIX A

STRATIFICATION DATA TABLES

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond	
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm	
BM-1	5/10/2016	13:15:40	0.5	12.75	101.1	10.7	8.79	-153.4	180.8	NA	NA	NA	
	6/6/2016	13:58:53	0.5	18.94	99	9.18	8.3	-127.1	182	NA	NA	NA	
	7/18/2016	12:53:01	0.5	17.51	98.2	9.38	7.52	-51.1	161	25.6	3	0.461	
	8/16/2016	12:09:17	0.5	19.61	91	8.32	7.38	-43.5	-21.9	7.8	1.5	0.469	
	9/12/2016	12:20:22	0.5	24.13	84.7	7.1	7.51	-51.6	139.1	8	2.1	0.417	
BM-2	5/10/2016	9:48:35	0.5	14.68	121.2	12.29	8.3	-126.5	235.8	NA	NA	NA	
		9:46:58	5.0	14.69	120.7	12.24	8.25	-123.6	237.8	NA	NA	NA	
		9:45:14	10.0	14.67	118	11.97	8.27	-124.8	233.7	NA	NA	NA	
		9:44:05	15.0	14.61	112.7	11.45	8.2	-120.6	233.9	NA	NA	NA	
		9:42:30	20.0	14.18	97.6	10.01	7.86	-101.4	242.5	NA	NA	NA	
		9:41:09	25.0	13.76	84	8.7	7.66	-90.2	246.3	NA	NA	NA	
		9:39:51	30.0	10.95	36.6	4.04	7.34	-71.7	251.9	NA	NA	NA	
		9:38:44	35.0	9.96	27.3	3.08	7.33	-71.2	253.9	NA	NA	NA	
		9:36:39	40.0	9.75	23.8	2.7	7.33	-71.2	257	NA	NA	NA	
9:35:25	45	9.71	23.6	2.68	7.37	-73.5	258.1	NA	NA	NA			
BM-2	6/6/2016	10:21:47	0.5	24.52	117.1	9.76	8.57	-144.6	74.7	NA	NA	NA	
		10:20:32	5	24.5	115.9	9.66	8.48	-139.3	71.9	NA	NA	NA	
		10:19:45	10	24.3	115.9	9.69	8.38	-133.4	69.4	NA	NA	NA	
		10:18:48	15	15.89	93.8	9.28	8.14	-117.5	73.9	NA	NA	NA	
		10:17:32	20	14.61	51.7	5.25	7.9	-103.4	75.8	NA	NA	NA	
		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		10:17:03	30	14.13	42.3	4.34	7.85	-100.8	76.9	NA	NA	NA	
		10:15:18	35	13.02	17.3	1.82	7.76	-95.6	76.8	NA	NA	NA	
		10:11:05	40	11.91	0.9	0.1	7.83	-99.1	61.1	NA	NA	NA	
10:13:40	45	11.41	0.1	0.01	7.74	-94	73.8	NA	NA	NA			
BM-2	7/18/2016	9:41:49	0.5	28.76	146.3	11.29	8.78	-127.8	114.2	8.6	2.5	0.369	
		9:40:53	5	28.4	150.4	11.68	8.8	-129	111.6	9.8	6	0.368	
		9:39:20	10	27.77	113	8.87	8.4	-104.9	112.6	11.8	5.9	0.387	
		9:37:59	15	25.22	14.9	1.22	7.43	-46.7	116.2	6.4	5.7	0.449	
		9:36:09	20	22.45	0.6	0.05	7.39	-44.1	105.6	7.7	4.9	0.496	
		9:35:08	25	19.78	0.3	0.03	7.39	-43.8	100.6	2.5	4	0.497	
		9:34:04	30	17.78	0.1	0.01	7.36	-42.3	100	6.8	3.2	0.481	
		9:33:23	35	15.7	0	0	7.35	-41.2	109.8	4.3	3.4	0.474	
		9:29:39	40	13.93	0.1	0.01	7.33	-39.9	127.4	7.1	5.2	0.474	
		9:26:51	45	13.68	0.9	0.09	7.27	-36.8	125.5	11.9	4	0.477	
BM-2	8/16/2016	10:53:34	0.5	29.86	154.7	11.71	9.09	-147.2	41	11.4	3.9	0.366	
		10:52:44	5	29.82	152.2	11.53	9.09	-147	34.5	11.8	5.1	0.366	
		10:51:36	10	27.83	78.3	6.14	8.39	-104.5	24.9	11	6.2	0.386	
		10:50:53	15	26.55	10.9	0.87	7.63	-59	12.2	5.4	4.4	0.396	
		10:50:14	20	25.4	1.3	0.11	7.49	-50.2	6.6	2.1	2.7	0.425	
		10:49:26	25	24.25	1.3	0.11	7.43	-46.9	4.8	3.6	2.5	0.416	
		10:47:53	30	23.45	1.5	0.12	7.35	-41.7	1.2	5.3	1.7	0.453	
		10:46:37	35	22.04	1.6	0.14	7.26	-36.6	-4.6	7.8	2.1	0.469	
		10:45:29	40	20.24	1.7	0.15	7.15	-29.9	-18.6	16	2.7	0.465	
10:43:59	45	19.88	3.1	0.28	7.12	-28	-34.1	17.7	3.3	0.467			

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
BM-2	9/12/2016	9:31:10	0.5	26.26	101.2	8.16	8.67	-120.4	105.7	12.8	7.8	0.379
		9:29:53	5	26.26	99.7	8.04	8.66	-120	103.3	14.6	11.4	0.379
		9:28:12	10	26.24	95.4	7.7	8.62	-117.8	99.5	11.7	12.2	0.379
		9:27:08	15	26.22	91.4	7.38	8.6	-116.1	96.4	12.3	10.3	0.379
		9:25:35	20	25.3	2.4	0.19	7.58	-55.8	102.5	5	6.5	0.401
		9:23:56	25	24.78	1.5	0.12	7.53	-52.4	98.8	4.5	4.3	0.408
		9:22:52	30	24.12	1.5	0.13	7.47	-49.1	95.7	6.8	3.8	0.421
		9:21:25	35	23.59	1.7	0.15	7.45	-47.6	86.7	14.1	2.8	0.425
		9:19:44	40	23.03	2.4	0.2	7.37	-43.3	93	29.5	4.7	0.428
BM-4												
	Inactive Sampling Station											
BM-5	5/10/2016	12:38:28	1.0	12.36	92.2	9.84	9.11	-171.1	166.7	NA	NA	NA
	6/6/2016	13:18:19	1.0	19.28	95.7	8.82	8.18	-120.3	194.9	NA	NA	NA
	7/18/2016	12:23:43	1.0	23.92	92.4	7.78	8.1	-85.8	172.3	11.8	2.6	0.617
	8/16/2016	11:39:31	1.0	25.72	88.9	7.24	8.03	-82.6	111.4	22.8	12.1	0.325
	9/12/2016	11:52:36	1.0	20.55	87.6	7.87	8.08	-84.4	168.7	19.1	0.1	0.549
BM-6	5/10/2016	9:20:19	0.5	14.88	123.4	12.46	8.13	-117	252.7	NA	NA	NA
		9:19:24	5	14.9	123.1	12.43	8.08	-113.7	255.7	NA	NA	NA
		9:18:03	10	14.89	121.6	12.28	8.02	-110.2	257	NA	NA	NA
		9:16:40	15	14.76	117.7	11.92	7.87	-102.1	261.1	NA	NA	NA
		9:14:40	20	14.02	97.2	10	7.49	-80.5	268.2	NA	NA	NA
		9:11:17	25	13.11	74.5	7.82	7.06	-56.2	277.3	NA	NA	NA
		9:09:48	30	12.41	62	6.61	6.96	-50.4	278.8	NA	NA	NA
		9:08:22	35	11.05	49.5	5.45	7.03	-54.1	273.7	NA	NA	NA
		9:05:39	40	10.12	38.5	4.33	7.01	-53	274.8	NA	NA	NA
		9:04:20	45	10.07	36.7	4.13	6.98	-51.4	276.6	NA	NA	NA
9:02:08	50	9.62	25.3	2.88	6.79	-40.8	287.8	NA	NA	NA		
BM-6	6/6/2016	1:39:56	0.5	25	117	9.66	8.56	-144	136.1	NA	NA	NA
		1:38:46	5	24.88	114	9.44	8.54	-142.8	133.3	NA	NA	NA
		1:37:20	10	24.7	111.6	9.26	8.46	-138.4	132.2	NA	NA	NA
		1:34:23	15	20.77	133.5	11.94	8.21	-122.5	131.8	NA	NA	NA
		1:31:32	20	15.76	92.3	9.15	7.99	-109.1	131.1	NA	NA	NA
		1:29:10	25	14.79	66.3	6.71	7.74	-94.5	130.9	NA	NA	NA
		1:25:58	30	13.7	38.3	3.97	7.54	-83.1	130.4	NA	NA	NA
		1:22:52	35	12.46	12.2	1.3	7.33	-71.1	132.2	NA	NA	NA
		1:20:32	40	11.23	-0.3	-0.04	7.19	-63.1	130.9	NA	NA	NA
		1:19:17	45	11.04	-0.3	-0.03	7.18	-62.6	123.7	NA	NA	NA
1:16:03	50	10.86	0.4	0.04	7.09	-57.8	86.6	NA	NA	NA		

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
BM-6 Secchi 1.80 m	7/18/2016	9:10:44	0.5	28.73	153.4	11.85	8.78	-127.8	127.7	6.6	2.1	0.362
		9:09:20	5	28.52	139.9	10.84	8.69	-122.5	125.3	7.4	5.1	0.364
		9:08:41	10	27.54	98.8	7.79	8.15	-89.8	130.5	13.6	6.5	0.388
		9:07:34	15	24.95	8.3	0.68	7.43	-46.7	136.9	6.1	5.6	0.455
		9:05:45	20	23.61	0.8	0.06	7.4	-44.7	132.7	5	6.8	0.479
		9:04:09	25	20.17	0.4	0.04	7.37	-42.8	130.3	2.7	3.7	0.486
		9:02:44	30	16.98	0.2	0.02	7.35	-41.2	128.7	2.3	3.4	0.465
		9:00:47	35	14.74	0.1	0.01	7.29	-38	129.2	2.5	2.9	0.461
		8:58:44	40	14.08	0.2	0.02	7.23	-34.5	130.4	4.3	2.5	0.464
		8:56:50	45	13.54	0.4	0.04	7.13	-28.9	119.4	7.3	3.5	0.469
8:54:59	50	13.3	0.9	0.1	6.99	-20.8	105	14.4	12.3	0.473		
BM-6 Secchi 1.25 M	8/16/2016	8:43:08	0.5	29.58	148.6	11.31	9.04	-144	33.5	7.4	1.7	0.370
		8:41:47	5	29.59	146.1	11.11	9.03	-143.4	24.2	8.7	2.7	0.371
		8:40:22	10	28.42	98	7.61	8.66	-120.6	4.3	9.3	3.7	0.391
		8:39:22	15	26.53	2.4	0.19	7.6	-56.9	-53.7	5.9	4.8	0.417
		8:38:16	20	25.37	0.7	0.06	7.45	-48.1	-59.2	2.4	1.6	0.460
		8:36:36	25	24.47	0.8	0.07	7.41	-45.5	-67.8	2.5	0.3	0.471
		8:35:05	30	23.57	0.7	0.06	7.39	-44.1	-76.1	1.0	0.6	0.473
		8:33:52	35	21.96	0.7	0.06	7.35	-42	-81	1.0	1.2	0.470
		8:32:30	40	20.48	0.6	0.06	7.32	-39.8	-87.6	5.4	1.2	0.465
		8:29:42	45	19.37	0.9	0.08	7.22	-34.2	-113.5	5.6	1.6	0.464
8:26:50	50	18.45	1.4	0.13	7.07	-25.1	-128.5	7.4	49.7	0.466		
BM-6 Secchi 1.10 m	9/12/2016	9:07:59	0.5	26.38	99.4	8.00	8.66	-119.7	130.7	11.40	5.4	0.378
		9:06:44	5	26.36	98.3	7.92	8.65	-119.6	128.8	13.80	11.4	0.378
		9:04:57	10	26.35	93.8	7.55	8.62	-117.8	125.2	11.60	9.2	0.378
		9:04:01	15	26.33	82.8	6.67	8.57	-114.3	123.8	15.70	7.7	0.379
		9:03:02	20	25.31	4.9	0.40	7.6	-57.1	133.2	3.10	4.6	0.401
		9:01:30	25	24.86	0.9	0.08	7.52	-52.1	132	3.00	3.1	0.412
		9:00:07	30	24.11	1.0	0.08	7.42	-45.8	131.8	4.30	2	0.422
		8:58:57	35	23.53	1.0	0.08	7.4	-44.8	130.2	9.60	2.1	0.422
		8:57:49	40	23.21	1.0	0.09	7.36	-42.3	128.3	10.30	2.1	0.421
		8:56:34	45	23.25	1.2	0.11	7.36	-42.5	127.6	11.80	2	0.421
8:55:00	50	22.89	1.4	0.12	7.31	-39.7	125	12.20	1.9	0.421		
BM-7	5/10/2016	10:18:42	0.5	14.94	138.4	13.96	9.4	-188.6	171.6	NA	NA	NA
		10:16:08	5.0	14.94	133.9	13.51	9.13	-173.3	183.2	NA	NA	NA
		10:15:08	10.0	14.88	125.4	12.67	8.83	-156.4	194.8	NA	NA	NA
		10:14:18	15.0	14.68	119.1	12.08	8.48	-136.2	210.6	NA	NA	NA
		10:13:12	20.0	14.36	106.3	10.86	8.34	-128.6	210.4	NA	NA	NA
		10:12:08	25.0	13.77	91.1	9.43	8.1	-114.8	214.4	NA	NA	NA
		10:09:06	30.0	12.09	53.8	5.77	7.86	-100.7	216.5	NA	NA	NA

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
BM-7	6/6/2016	10:46:08	0.5	25.39	103.4	8.47	8.53	-142.6	128	NA	NA	NA
		10:45:06	5	25.28	102.6	8.43	8.49	-140.2	126.9	NA	NA	NA
		10:43:34	10	23.47	84.3	7.16	8.22	-123.8	129.8	NA	NA	NA
		10:42:35	15	18.77	104.7	9.75	8.32	-128.7	127.1	NA	NA	NA
		10:41:13	20	15.54	79.6	7.92	8.29	-126.1	125.1	NA	NA	NA
		10:39:43	25	14.44	43.9	4.47	8.2	-120.3	124.4	NA	NA	NA
		10:38:32	30	14.2	36.9	3.79	8.19	-119.7	125	NA	NA	NA
BM-7	7/18/2016	10:06:22	0.5	28.56	142.1	11.01	8.77	-127.5	114.7	17	3.5	0.375
		10:05:06	5	28.21	136.4	10.63	8.73	-124.5	113.6	12.9	6.4	0.377
		10:03:42	10	28.05	122	9.53	8.61	-117.3	112.4	20	5.7	0.378
		10:02:29	15	25.68	30.2	2.46	7.44	-47.3	126.3	4.6	2.6	0.442
		10:00:21	20	23.09	1.4	0.12	7.37	-42.9	116	4.1	3.6	0.494
		9:59:01	25	20.33	1.4	0.13	7.37	-42.9	104	4.5	2.6	0.514
		9:57:58	30	18.68	1.7	0.15	7.35	-41.4	83.4	9.6	2.3	0.514
BM-7	8/16/2016	10:29:48	0.5	29.64	156.1	11.87	9.09	-146.7	70.2	10.7	5.3	0.367
		10:28:50	5	29.59	155.1	11.8	9.09	-147	67.9	13.1	6.7	0.366
		10:27:30	10	29.28	130.3	9.97	8.95	-138.6	64.9	13.4	5.6	0.365
		10:26:33	15	26.92	35.9	2.87	7.65	-59.9	68.9	11.2	3.3	0.387
		10:25:42	20	25.4	1.5	0.12	7.48	-49.6	64.6	4.4	2.8	0.407
		10:24:31	25	24.46	1.6	0.13	7.37	-43.4	65.7	6.7	2.9	0.418
		10:23:38	30	23.14	1.6	0.14	7.27	-37.3	68	19.2	2.8	0.418
BM-7	9/12/2016	10:22:29	34	21.96	1.9	0.17	7.18	-31.9	68.7	33.7	3.3	0.429
		9:53:27	0.5	26.06	102.1	8.27	8.63	-118.4	128.2	13.00	7.3	0.376
		9:52:15	5	26.03	97.1	7.87	8.57	-114.5	129	14.60	11.3	0.377
		9:50:51	10	25.99	90.8	7.36	8.49	-109.8	129	13.90	9.8	0.378
		9:48:39	15	25.95	87.2	7.08	8.46	-108	127.4	13.50	9.9	0.379
		9:46:55	20	25.73	64.8	5.28	8.19	-92.2	129.5	8.70	7.8	0.383
		9:45:41	25	24.83	18.1	1.5	7.65	-59.5	135.3	8.80	3.5	0.401
BM-8	5/10/2016	11:35:14	0.5	14.59	134.5	13.67	9.52	-195.4	181	NA	NA	NA
		11:34:06	5.0	14.56	129.8	13.2	9.42	-189.5	185.1	NA	NA	NA
		11:32:46	10.0	14.53	126.2	12.84	9.3	-183	189	NA	NA	NA
		11:31:18	15.0	14.48	120.3	12.26	9.06	-169.1	198.2	NA	NA	NA
		11:29:56	20.0	13.55	92.3	9.6	8.73	-150.3	202.3	NA	NA	NA
		11:27:46	22.0	12.84	71.6	7.56	8.53	-138.8	206.6	NA	NA	NA
		BM-8	6/6/2016	12:15:37	0.5	25.6	124.3	10.15	8.82	-159.8	204	NA
12:14:42	5			25.48	118.7	9.71	8.69	-152.1	204.9	NA	NA	NA
12:13:41	10			22.66	71.9	6.2	8.23	-124.4	215.7	NA	NA	NA
12:12:15	15			17.9	84.4	8	8.28	-125.8	215.5	NA	NA	NA
12:11:07	20			15.65	36.4	3.62	8.2	-120.6	218.5	NA	NA	NA
12:10:12	22			15.06	21.8	2.19	8.2	-120.6	220.6	NA	NA	NA

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
BM-8	7/18/2016	11:28:54	0.5	29.06	186.8	14.34	9	-141.5	126	13.8	4.4	0.358
		11:28:02	5	28.81	187.2	14.43	9	-140.9	125.4	13.7	6.8	0.357
		11:26:47	10	27.49	98	7.73	7.98	-79.6	138.6	9.4	4.6	0.390
		11:24:56	15	25.54	21	1.71	7.44	-47.1	138	5.8	3.5	0.432
		11:23:22	20	22.43	2	0.17	7.36	-42.2	130.4	6.3	3.2	0.503
		11:21:52	22	21.68	3	0.27	7.35	-41.7	100.5	37.1	3.2	0.503
BM-8	8/16/2016	10:07:53	0.5	29.96	196.6	14.86	9.31	-160.3	64.2	20.5	7.5	0.346
		10:07:03	5	29.82	183.9	13.94	9.26	-157.3	62.7	19.9	8.3	0.345
		10:05:30	10	28.16	80.2	6.26	8.24	-95.6	66	24.5	4.4	0.388
		10:04:24	15	26.83	7.6	0.61	7.52	-52	63.8	13.8	2	0.406
		10:03:17	20	25.68	2.1	0.17	7.48	-49.8	59.4	13.5	0.2	0.415
		10:01:43	21	25.34	3.2	0.27	7.47	-49.3	63.1	26.1	1.5	0.414
BM-8	9/12/2016	11:04:12	0.5	26.72	147.8	11.83	9.02	-141.6	157.9	16.6	8.9	0.367
		11:03:16	5	26.54	141.9	11.39	8.97	-138.7	159.3	17.7	13.8	0.366
		11:02:21	10	26.4	131.7	10.6	8.91	-134.8	160.8	17.4	13.2	0.366
		11:01:06	15	25.98	63.1	5.12	8.04	-83.2	174.4	15	7.3	0.395
		11:00:00	20	25.05	22.2	1.83	7.65	-59.6	179.4	14.3	3.8	0.405
		10:59:10	21	24.86	13	1.08	7.6	-56.5	180.1	13.8	4.4	0.408
BM-9	5/10/2016	10:42:10	0.5	14.84	139	14.05	9.63	-201.7	156.4	NA	NA	NA
		10:40:51	5	14.82	137	13.86	9.58	-199	158.1	NA	NA	NA
		10:38:49	10	14.77	129.8	13.14	9.34	-185.5	166.8	NA	NA	NA
		10:37:58	15	14.58	121.5	12.35	9.24	-179.4	167.7	NA	NA	NA
		10:36:32	20	13.98	103	10.6	8.83	-156	179.1	NA	NA	NA
		10:34:36	25	12.71	67.6	7.16	8.28	-124.5	193.9	NA	NA	NA
		10:32:54	30	11.69	38.6	4.18	8.23	-121.6	195.4	NA	NA	NA
BM-9	6/6/2016	11:14:52	0.5	25.48	109.9	8.99	8.53	-142.3	166.3	NA	NA	NA
		11:13:46	5	25.38	108.8	8.92	8.48	-139.7	165.1	NA	NA	NA
		11:12:08	10	24.69	90.8	7.54	8.25	-125.8	164.8	NA	NA	NA
		11:10:43	15	17.69	91.6	8.72	8.16	-119.2	165.4	NA	NA	NA
		11:09:30	20	15.71	67.6	6.71	8.11	-115.8	163.9	NA	NA	NA
		11:07:54	25	14.34	20.6	2.11	8.01	-109.9	163.1	NA	NA	NA
		11:06:35	30	14.08	6	0.62	8	-109.1	161.9	NA	NA	NA
		11:05:16	32	13.68	1.6	0.16	7.99	-108.6	161	NA	NA	NA
BM-9	7/18/2016	10:31:44	0.5	29.2	178.8	13.69	8.95	-138.1	95.2	10.9	3.3	0.357
		10:30:34	5	28.67	173.5	13.41	8.93	-136.7	92.6	13.8	10	0.358
		10:28:52	10	27.29	82.5	6.53	7.69	-62.7	104.1	11.8	4.3	0.404
		10:27:30	15	25.5	28.1	2.3	7.43	-46.9	94.8	4.9	2.8	0.452
		10:26:13	20	23.15	0.8	0.07	7.36	-42.7	83.5	6.6	3.5	0.496
		10:24:31	25	20.97	0.7	0.06	7.36	-42.6	72.8	14.4	2.5	0.519
		10:21:44	30	17.95	0.9	0.08	7.31	-39.1	71.3	38.7	3.9	0.530
		10:19:47	32	16.09	1.3	0.12	7.23	-34.7	16.5	43.8	4.5	0.516

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
BM-9	8/16/2016	9:49:10	0.5	29.69	162.9	12.37	9.16	-151.3	57.9	19.1	4.1	0.357
		9:48:26	5	29.64	159.2	12.1	9.15	-150.4	55.8	17.8	6	0.358
		9:47:25	10	28.9	122.4	9.42	8.89	-134.3	55.3	13.9	4.9	0.366
		9:46:19	15	26.93	40.2	3.21	7.68	-61.5	56.3	9.4	2.6	0.382
		9:45:24	20	25.74	1.7	0.14	7.43	-46.9	48.8	8.3	2.3	0.425
		9:44:27	25	24.38	1.7	0.14	7.38	-43.6	47.1	13.3	2.1	0.424
		9:43:07	30	23.22	2	0.17	7.28	-37.6	57.8	54.6	2.8	0.429
		9:41:32	32	23	2.6	0.22	7.26	-36.5	57	84.5	4.3	0.436
BM-9	9/12/2016	10:12:43	0.5	26.36	129.1	10.39	8.88	-133.1	100.3	17.7	9.7	0.369
		10:11:30	5	26.25	120.4	9.72	8.82	-129.2	98.5	21.8	13.4	0.369
		10:10:13	10	26.18	106.3	8.59	8.71	-122.7	96.7	16.7	12	0.372
		10:09:07	15	25.78	52.9	4.31	7.95	-77.5	103.8	8.4	6	0.390
		10:07:56	20	25.04	28.9	2.38	7.7	-62.4	102.9	7.2	4.3	0.397
		10:06:11	25	24.51	12.4	1.03	7.57	-54.7	96.4	11.5	3	0.411
		10:04:50	30	24.24	2.9	0.25	7.51	-51.2	86.9	24.4	3.7	0.431
		10:02:53	31	24.18	3.9	0.33	7.51	-51.2	58.7	39.3	3.7	0.434
BM-10	5/10/2016	11:05:10	0.5	14.65	97.2	9.86	9.04	-167.9	167.4	NA	NA	NA
		11:03:33	5	14.61	94.9	9.64	8.8	-154.5	180.1	NA	NA	NA
		11:02:35	10	14.35	90.1	9.2	8.69	-148.1	184.7	NA	NA	NA
		11:01:26	15	13.65	75.3	7.81	8.5	-137.3	193.2	NA	NA	NA
		11:00:07	20	12.54	58.5	6.22	8.48	-135.7	196.2	NA	NA	NA
BM-10	6/6/2016	11:46:59	0.5	25.89	126.2	10.25	8.79	-157.8	188.6	NA	NA	NA
		11:46:09	5	25.58	121.8	9.95	8.71	-153.3	188.1	NA	NA	NA
		11:44:47	10	22.92	71.1	6.1	8.24	-125	196.6	NA	NA	NA
		11:43:09	15	17.16	12.1	1.16	8.09	-114.7	199	NA	NA	NA
		11:40:04	20	16.08	17.6	1.73	8.2	-121	195	NA	NA	NA
BM-10	7/18/2016	10:55:14	0.5	29.22	227.8	17.44	9.22	-154.4	128.5	18	11.1	0.343
		10:54:07	5	28.46	204.9	15.89	9.06	-144.5	133.2	35.2	10.1	0.345
		10:52:36	10	27.47	101.9	8.05	7.8	-68.8	152.8	19.8	4.9	0.412
		10:51:13	15	25.72	71.5	5.82	7.72	-63.8	153.2	76.3	5.8	0.537
		10:49:35	20	23.46	3.4	0.29	7.4	-44.9	142	87.2	4.2	0.571
BM-10	8/16/2016	9:21:15	0.5	29.77	228.6	17.34	9.56	-175.2	65.6	39.6	7.1	0.327
		9:20:25	5	29.35	189.6	14.48	9.32	-160.6	69.8	37.2	7.6	0.332
		9:19:09	10	28.32	118.4	9.21	8.49	-110.3	80.9	41.9	5.6	0.386
		9:17:57	15	27.29	83.5	6.62	8	-81.1	85.5	44.9	3.1	0.444
		9:16:38	20	26.37	53	4.26	7.74	-65	86.6	116.6	3.4	0.511
BM-10	9/12/2016	10:38:58	0.5	26.12	125	10.11	8.76	-126	130.4	31.8	7.6	0.379
		10:37:56	5	25.81	113.8	9.26	8.65	-119.3	131.6	35.3	10.1	0.378
		10:36:40	10	25.63	87.2	7.11	8.28	-97.2	136.2	29.2	7.2	0.389
		10:33:49	15	25	27.8	2.29	7.62	-58.1	143.5	33.9	4.7	0.461
		10:32:35	19	24.82	19.1	1.58	7.57	-55.2	142.4	68.7	6.1	0.480

2016 Blue Marsh Stratification/Profile

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
BM-11	5/10/2016	12:42:18	1.0	11.63	101.8	11.06	9.36	-184.8	157.8	NA	NA	NA
	6/6/2016	13:21:59	1.0	20.28	98.9	8.93	8.38	-132.5	191.5	NA	NA	NA
	7/18/2016	12:20:09	1.0	23.37	97.4	8.28	8	-79.9	155.7	43	1.1	0.650
	8/16/2016	11:36:32	1.0	25.06	73.2	6.04	7.82	-70	100.6	31.4	3.4	0.363
	9/12/2016	11:55:36	1.0	19.79	76.7	7	7.75	-65.1	173.9	52.5	3.3	0.296

APPENDIX B

BACTERIA SAMPLING DATA TABLES

BLUE MARSH RESERVOIR SWIMMING BEACH MONITORING PROGRAM RESULTS
Fecal/e-coli Coliform 2016

<u>DAY</u>	<u>DATE</u>	<u>FECAL COLIFORM</u>				<u>E-COLI</u>			
		<u>SB1</u>	<u>SB2</u>	<u>SB3</u>	<u>Arith. AVG.&LOG</u>	<u>SB1</u>	<u>SB2</u>	<u>SB3</u>	<u>Ave./LOG</u>
Mon.	9-May	5.00	5.00	10.00	6.67	4.00	5.00	6.00	5.00
Thur.	12-May	1.00	5.00	2.00	2.67	1.00	4.00	1.00	2.00
Mon.	16-May	2.00	5.00	2.00	3.00	1.00	2.00	1.00	1.33
Thur.	19-May	20.00	5.00	5.00	10.00	16.00	5.00	3.00	8.00
Mon.	23-May	5.00	2.00	6.00	4.33	5.00	2.00	5.00	4.00
5 smpl. Log Value		0.60	0.62	0.62	0.67	0.50	0.52	0.39	0.53
5 smpl. Geo. Mean		3.98	4.16	4.13	4.71	3.17	3.31	2.46	3.36
Thur.	26-May	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00
5 smpl. Log Value		0.52	0.54	0.48	0.57	0.38	0.38	0.24	0.39
5 smpl. Geo. Mean		3.31	3.47	2.99	3.70	2.40	2.40	1.72	2.43
Teus.	31-May	36.00	50.00	39.00	41.67	29.00	46.00	34.00	36.33
5 smpl. Log Value		0.83	0.74	0.73	0.81	0.67	0.59	0.54	0.64
5 smpl. Geo. Mean		6.79	5.49	5.42	6.41	4.71	3.92	3.48	4.35
Thur.	2-Jun	18.00	6.00	10.00	11.33	16.00	2.00	3.00	7.00
5 smpl. Log Value		1.02	0.76	0.87	0.92	0.91	0.59	0.64	0.78
5 smpl. Geo. Mean		10.53	5.70	7.48	8.36	8.20	3.92	4.33	6.05
Mon.	6-Jun	42.00	20.00	34.00	32.00	37.00	15.00	32.00	28.00
5 smpl. Log Value		1.09	0.88	1.04	1.02	0.99	0.69	0.84	0.89
5 smpl. Geo. Mean		12.22	7.52	10.97	10.55	9.70	4.88	6.96	7.78
Thur.	9-Jun	3.00	5.00	6.00	4.67	2.00	3.00	3.00	2.67
5 smpl. Log Value		1.04	0.96	1.04	1.03	0.91	0.72	0.80	0.86
5 smpl. Geo. Mean		11.03	9.03	10.97	10.71	8.08	5.29	6.28	7.17
Mon.	13-Jun	10.00	18.00	16.00	14.67	3.00	14.00	11.00	9.33
5 smpl. Log Value		1.18	1.15	1.22	1.20	1.00	0.95	1.01	1.05
5 smpl. Geo. Mean		15.22	14.01	16.63	15.96	10.06	8.97	10.15	11.21
Thur.	16-Jun	10.00	10.00	6.00	8.67	6.00	9.00	6.00	7.00

5 smpl. Log Value		1.07	1.01	1.06	1.07	0.87	0.81	0.86	0.91
5 smpl. Geo. Mean		11.78	10.16	11.44	11.66	7.34	6.47	7.17	8.07
Mon.	20-Jun	6.00	3.00	23.00	10.67	6.00	3.00	11.00	6.67
5 smpl. Log Value		0.98	0.95	1.13	1.06	0.78	0.85	0.97	0.90
5 smpl. Geo. Mean		9.46	8.84	13.51	11.52	6.03	7.02	9.30	7.99
Thur.	23-Jun	3.00	3.00	5.00	3.67	2.00	2.00	4.00	2.67
5 smpl. Log Value		0.75	0.78	0.96	0.87	0.53	0.67	0.79	0.70
5 smpl. Geo. Mean		5.58	6.05	9.21	7.47	3.37	4.69	6.14	4.99
Mon.	27-Jun	31.00	21.00	8.00	20.00	28.00	11.00	7.00	15.33
5 smpl. Log Value		0.95	0.91	0.99	1.00	0.76	0.78	0.86	0.85
5 smpl. Geo. Mean		8.90	8.06	9.75	9.99	5.71	6.08	7.27	7.08
Thur.	30-Jun	3.00	2.00	2.00	2.33	1.00	1.00	1.00	1.00
5 smpl. Log Value		0.84	0.72	0.81	0.84	0.66	0.55	0.65	0.66
5 smpl. Geo. Mean		6.99	5.19	6.44	6.92	4.58	3.59	4.50	4.53
Tues.	5-Jul	11.00	5.00	6.00	7.33	8.00	2.00	4.00	4.67
5 smpl. Log Value		0.85	0.66	0.81	0.83	0.69	0.42	0.62	0.62
5 smpl. Geo. Mean		7.13	4.52	6.44	6.69	4.85	2.66	4.15	4.18
Thur.	7-Jul	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00
5 smpl. Log Value		0.76	0.62	0.60	0.68	0.53	0.33	0.41	0.46
5 smpl. Geo. Mean		5.72	4.17	3.95	4.79	3.39	2.13	2.57	2.86
Mon.	11-Jul	6.00	3.00	10.00	6.33	2.00	2.00	3.00	2.33
5 smpl. Log Value		0.82	0.62	0.66	0.73	0.53	0.33	0.38	0.44
5 smpl. Geo. Mean		6.57	4.17	4.54	5.34	3.39	2.13	2.43	2.78
Thur.	14-Jul	3.00	3.00	5.00	3.67	1.00	1.00	2.00	1.33
5 smpl. Log Value		0.61	0.45	0.62	0.58	0.24	0.12	0.28	0.23
5 smpl. Geo. Mean		4.12	2.83	4.13	3.80	1.74	1.32	1.89	1.71
Mon.	18-Jul	28.00	5.00	5.00	12.67	20.00	2.00	2.00	8.00
5 smpl. Log Value		0.81	0.53	0.70	0.73	0.50	0.18	0.34	0.41
5 smpl. Geo. Mean		6.44	3.39	4.96	5.33	3.17	1.52	2.17	2.59
Thur.	21-Jul	5.00	5.00	2.00	4.00	3.00	1.00	2.00	2.00
5 smpl. Log Value		0.74	0.53	0.60	0.67	0.42	0.12	0.28	0.34
5 smpl. Geo. Mean		5.50	3.39	3.98	4.72	2.61	1.32	1.89	2.18
Mon.	25-Jul	16.00	58.00	13.00	29.00	10.00	13.00	13.00	12.00
5 smpl. Log Value		0.92	0.82	0.76	0.91	0.62	0.34	0.50	0.56

BLUE MARSH BEACH BACTERIA DATA

5 smpl. Geo. Mean		8.34	6.65	5.79	8.07	4.13	2.20	3.15	3.59
Thur.	28-Jul	10.00	11.00	640.00	220.33	7.00	11.00	580.00	199.33
5 smpl. Log Value		0.97	0.94	1.12	1.21	0.72	0.49	0.96	0.94
5 smpl. Geo. Mean		9.24	8.63	13.30	16.40	5.30	3.10	9.04	8.74
Mon.	1-Aug	8.00	5.00	13.00	8.67	3.00	4.00	10.00	5.67
5 smpl. Log Value		1.05	0.98	1.21	1.29	0.82	0.61	1.10	1.07
5 smpl. Geo. Mean		11.24	9.56	16.10	19.48	6.61	4.09	12.47	11.67
Thur.	4-Aug	13.00	15.00	15.00	14.33	6.00	11.00	7.00	8.00
5 smpl. Log Value		0.98	1.08	1.30	1.30	0.72	0.76	1.20	1.07
5 smpl. Geo. Mean		9.64	11.91	20.06	19.97	5.19	5.75	16.02	11.67
Mon.	8-Aug	31.00	18.00	44.00	31.00	8.00	6.00	26.00	13.33
5 smpl. Log Value		1.14	1.19	1.57	1.48	0.80	0.92	1.43	1.23
5 smpl. Geo. Mean		13.88	15.38	37.22	30.08	6.32	8.23	26.76	17.06
Thur.	11-Aug	33.00	40.00	120.00	64.33	21.00	17.00	47.00	28.33
5 smpl. Log Value		1.21	1.15	1.76	1.55	0.87	0.94	1.54	1.31
5 smpl. Geo. Mean		16.05	14.28	58.05	35.27	7.33	8.68	34.60	20.26
Mon.	15-Aug	6.00	98.00	6.00	36.67	1.00	96.00	4.00	33.67
5 smpl. Log Value		1.16	1.34	1.36	1.39	0.70	1.13	1.11	1.15
5 smpl. Geo. Mean		14.49	22.12	22.81	24.64	4.97	13.39	12.79	14.20
Thur.	18-Aug	290.00	120.00	270.00	226.67	260.00	64.00	220.00	181.33
5 smpl. Log Value		1.47	1.62	1.62	1.68	1.08	1.37	1.38	1.45
5 smpl. Geo. Mean		29.71	41.76	41.85	47.33	12.13	23.32	23.73	28.39
Sat.	20-Aug	62.00	11.00	5.00	26.00	34.00	6.00	3.00	14.33
5 smpl. Log Value		1.61	1.59	1.53	1.73	1.23	1.32	1.30	1.50
5 smpl. Geo. Mean		40.60	39.25	33.59	53.32	17.15	20.66	20.03	31.90
Mon.	22-Aug	56.00	240.00	970.00	422.00	10.00	220.00	870.00	366.67
5 smpl. Log Value		1.66	1.82	1.79	1.95	1.25	1.63	1.61	1.79
5 smpl. Geo. Mean		45.70	65.89	62.36	89.88	17.94	42.45	40.42	61.90
Wed.	24-Aug	78.00	300.00	840.00	406.00	73.00	180.00	220.00	157.67
5 smpl. Log Value		1.73	1.99	1.96	2.11	1.36	1.83	1.74	1.94
5 smpl. Geo. Mean		54.28	98.59	92.03	129.93	23.01	68.05	55.04	87.26
Thur.	25-Aug	66.00	96.00	72.00	78.00	34.00	52.00	32.00	39.33
5 smpl. Log Value		1.94	1.99	2.18	2.18	1.67	1.78	1.92	1.95
5 smpl. Geo. Mean		87.68	98.18	151.27	151.10	46.59	60.20	83.43	90.02

BLUE MARSH BEACH BACTERIA DATA

Mon.	29-Aug	100.00	120.00	340.00	186.67	17.00	28.00	80.00	41.67
5 smpl. Log Value		1.85	1.99	2.20	2.16	1.43	1.71	1.83	1.83
5 smpl. Geo. Mean		70.87	98.18	158.40	145.34	27.00	51.03	68.15	67.08
Thur.	1-Sep	200.00	200.00	110.00	170.00	170.00	190.00	70.00	143.33
5 smpl. Log Value		1.95	2.24	2.47	2.33	1.57	2.01	2.11	2.03
5 smpl. Geo. Mean		89.57	175.37	293.93	211.59	37.25	101.84	127.95	106.31
Mon.					#DIV/0!				#DIV/0!

BLUE MARSH BEACH BACTERIA DATA

APPENDIX C

LABORATORY CUSTODY SHEETS

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

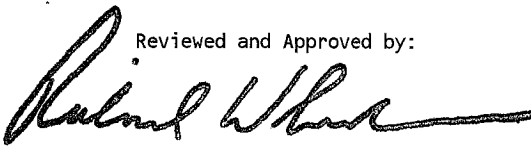
Date of Report: 05/24/16
 Lab ID: 3156-16-0016649
 Date Collected: 05/10/16 13:15
 Collected By: Client
 Date Received: 05/10/16 14:10

Sample Desc: BM-1 Surface

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	75	mpn/100ml	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.05	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:50	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	05/11	14:10	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	18:50	ALD
Nitrogen, Nitrate	4.59	mg/L	.1	2	EPA 353.2	05/11	14:40	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:50	JCL
Nitrogen, Total Kjeldahl	0.58	mg/L	.25	1	EPA 351.2	05/16	16:24	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/11	17:16	ALD
RESIDUES								
Solids, Total Dissolved	217	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	130	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016649

Date Collected: 05/10/16 13:15
Collected By: Client

Sample Desc: BM-1 Surface

Date Received: 05/10/16 14:10

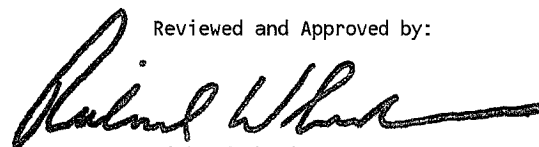
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016650

Date Collected: 05/10/16 09:30
 Collected By: Client

Sample Desc: BM-2 Surface

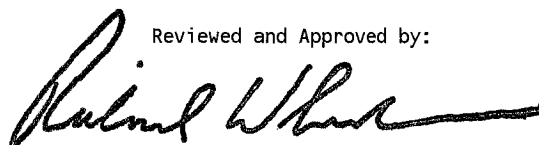
Date Received: 05/10/16 14:10

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	65	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.05	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:50	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	05/11	14:10	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	19:04	ALD
Nitrogen, Nitrate	4.60	mg/L	.1	2	EPA 353.2	05/11	14:42	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:53	JCL
Nitrogen, Total Kjeldahl	0.75	mg/L	.25	1	EPA 351.2	05/16	16:27	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	05/11	17:29	ALD
RESIDUES								
Solids, Total Dissolved	206	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	111	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016650

Date Collected: 05/10/16 09:30
Collected By: Client

Sample Desc: BM-2 Surface

Date Received: 05/10/16 14:10

PWSID: 3060912

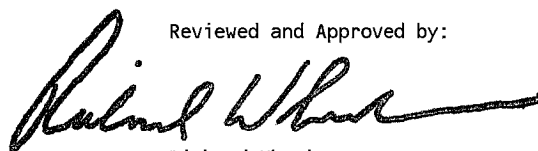
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
-----	-----	-----	-----	-----	-----	-----	-----

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.

- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016651

Date Collected: 05/10/16 09:30
 Collected By: Client

Sample Desc: BM-2 Mid-Depth

Date Received: 05/10/16 14:10

PWSID: 3060912

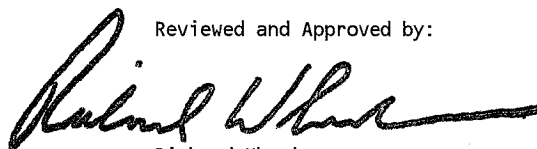
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/l	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	05/11	13:50	AEH
Phosphorus as P, Total	0.08	mg/l	.01	1	SM 4500P-E	05/11	14:10	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	05/10	19:19	ALD
Nitrogen, Nitrate	4.56	mg/l	.1	2	EPA 353.2	05/11	14:45	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	05/11	11:54	JCL
Nitrogen, Total Kjeldahl	0.42	mg/l	.25	1	EPA 351.2	05/16	16:28	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/l	1	1	SM5310 C	05/11	17:41	ALD
RESIDUES								
Solids, Total Dissolved	224	mg/l	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	4	mg/l	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	117	mg/l	1	1	SM 2320 B	05/11	13:25	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016652

Date Collected: 05/10/16 09:30
 Collected By: Client

Sample Desc: BM-2 Deep

Date Received: 05/10/16 14:10

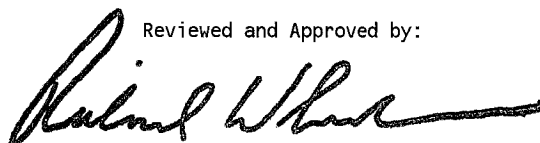
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:50	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/11	14:10	AEH
NITROGENS								
Nitrogen, Ammonia	0.20	mg/L	.05	1	D6919-03	05/10	19:34	ALD
Nitrogen, Nitrate	3.75	mg/L	.05	1	EPA 353.2	05/11	14:13	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:55	JCL
Nitrogen, Total Kjeldahl	0.84	mg/L	.25	1	EPA 351.2	05/16	16:29	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/11	17:52	ALD
RESIDUES								
Solids, Total Dissolved	229	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	19	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	120	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016653

Date Collected: 05/10/16 12:30
 Collected By: Client

Sample Desc: BM-5 Surface

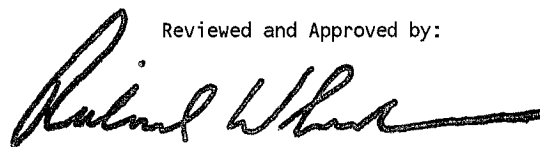
Date Received: 05/10/16 14:10

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	280	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	05/11	13:50	AEH
Phosphorus as P, Total	0.13	mg/L	.01	1	SM 4500P-E	05/11	14:10	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	19:48	ALD
Nitrogen, Nitrate	6.96	mg/L	.25	5	EPA 353.2	05/11	14:46	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:56	JCL
Nitrogen, Total Kjeldahl	0.59	mg/L	.25	1	EPA 351.2	05/16	16:30	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.3	mg/L	1	1	SM5310 C	05/11	18:04	ALD
RESIDUES								
Solids, Total Dissolved	308	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	200	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016653
Date Collected: 05/10/16 12:30
Collected By: Client
Date Received: 05/10/16 14:10

Sample Desc: BM-5 Surface

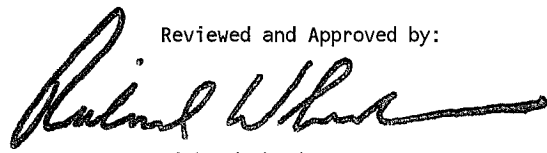
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016654

Date Collected: 05/10/16 09:00
 Collected By: Client

Sample Desc: BM-6 Surface

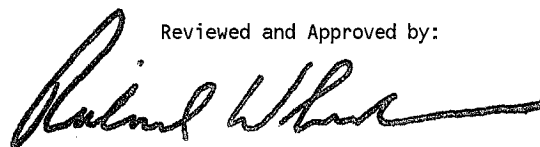
Date Received: 05/10/16 14:10

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	44	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/11	14:15	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	20:03	ALD
Nitrogen, Nitrate	4.64	mg/L	.1	2	EPA 353.2	05/11	14:47	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:57	JCL
Nitrogen, Total Kjeldahl	0.61	mg/L	.25	1	EPA 351.2	05/16	16:31	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 c	05/11	18:16	ALD
RESIDUES								
Solids, Total Dissolved	213	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	108	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016654

Date Collected: 05/10/16 09:00
Collected By: Client

Sample Desc: BM-6 Surface

Date Received: 05/10/16 14:10

PWSID: 3060912

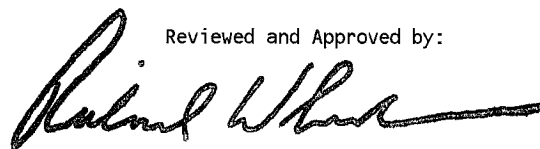
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016655

Date Collected: 05/10/16 09:00
 Collected By: Client

Sample Desc: BM-6 Mid-Depth

Date Received: 05/10/16 14:10

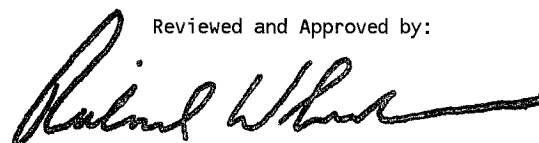
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:55	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	05/11	14:15	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	21:01	ALD
Nitrogen, Nitrate	4.76	mg/L	.1	2	EPA 353.2	05/11	14:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:58	JCL
Nitrogen, Total Kjeldahl	0.54	mg/L	.25	1	EPA 351.2	05/16	16:32	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	05/11	18:28	ALD
RESIDUES								
Solids, Total Dissolved	228	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	122	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016656

Date Collected: 05/10/16 09:00
 Collected By: Client

Sample Desc: BM-6 Deep

Date Received: 05/10/16 14:10

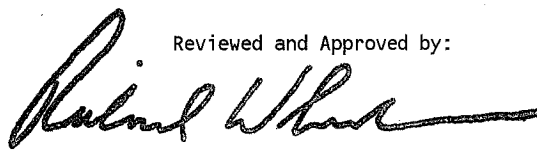
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:55	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	05/11	14:15	AEH
NITROGENS								
Nitrogen, Ammonia	0.21	mg/L	.05	1	D6919-03	05/10	21:16	ALD
Nitrogen, Nitrate	3.96	mg/L	.05	1	EPA 353.2	05/11	14:17	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	11:59	JCL
Nitrogen, Total Kjeldahl	0.75	mg/L	.25	1	EPA 351.2	05/16	16:33	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/11	18:40	ALD
RESIDUES								
Solids, Total Dissolved	239	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	138	mg/L	1	1	SM 2320 B	05/11	13:25	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016657

Date Collected: 05/10/16 10:00
 Collected By: Client

Sample Desc: BM-7 Surface

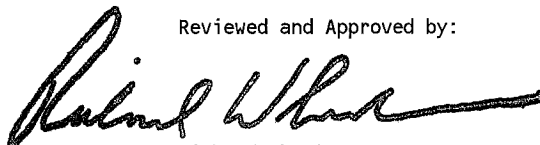
Date Received: 05/10/16 14:10

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	140	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/11	14:15	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	21:30	ALD
Nitrogen, Nitrate	4.54	mg/L	.1	2	EPA 353.2	05/11	14:49	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:02	JCL
Nitrogen, Total Kjeldahl	0.90	mg/L	.25	1	EPA 351.2	05/16	16:35	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/12	15:53	ALD
RESIDUES								
Solids, Total Dissolved	229	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	108	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016657

Date Collected: 05/10/16 10:00
 Collected By: Client

Sample Desc: BM-7 Surface

Date Received: 05/10/16 14:10

PWSID: 3060912

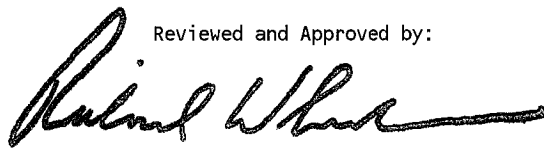
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.

- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016658
 Date Collected: 05/10/16 10:00
 Collected By: Client
 Date Received: 05/10/16 14:10

Sample Desc: BM-7 Mid-Depth

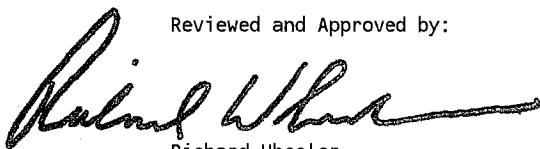
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	13:55	AEH
Phosphorus as P, Total	0.12	mg/L	.01	1	SM 4500P-E	05/11	14:15	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	21:45	ALD
Nitrogen, Nitrate	4.46	mg/L	.1	2	EPA 353.2	05/11	14:50	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:03	JCL
Nitrogen, Total Kjeldahl	0.52	mg/L	.25	1	EPA 351.2	05/16	16:36	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/12	16:18	ALD
RESIDUES								
Solids, Total Dissolved	223	mg/L	5	1	SM 2540C	05/11	13:05	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	05/11	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	125	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016659

Date Collected: 05/10/16 10:00
 Collected By: Client

Sample Desc: BM-7 Deep

Date Received: 05/10/16 14:10

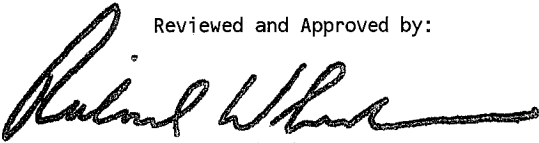
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:25	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	05/11	14:15	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	22:00	ALD
Nitrogen, Nitrate	4.00	mg/L	.05	1	EPA 353.2	05/11	14:21	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:04	JCL
Nitrogen, Total Kjeldahl	0.50	mg/L	.25	1	EPA 351.2	05/16	16:37	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/12	16:53	ALD
RESIDUES								
Solids, Total Dissolved	235	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	19	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	127	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016660

Date Collected: 05/10/16 11:30
 Collected By: Client

Sample Desc: BM-8 Surface

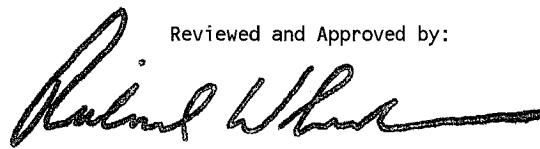
Date Received: 05/10/16 14:10

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	15	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	280	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	22:14	ALD
Nitrogen, Nitrate	3.98	mg/L	.05	1	EPA 353.2	05/11	14:22	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:06	JCL
Nitrogen, Total Kjeldahl	0.72	mg/L	.25	1	EPA 351.2	05/16	16:40	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.4	mg/L	1	1	SM5310 C	05/12	17:06	ALD
RESIDUES								
Solids, Total Dissolved	214	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to, pH 4.5	110	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016660
 Date Collected: 05/10/16 11:30
 Collected By: Client
 Date Received: 05/10/16 14:10

Sample Desc: BM-8 Surface

PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

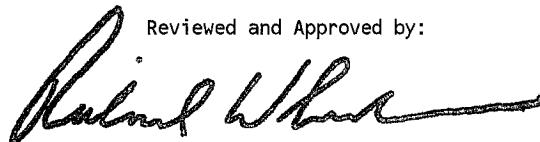
COMMENTS

- 01 The Nitrate matrix spike was low.

- 02 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.

- 03 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016661

Date Collected: 05/10/16 11:30
 Collected By: Client

Sample Desc: BM-8 Mid-Depth

Date Received: 05/10/16 14:10

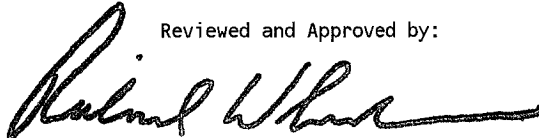
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	22:29	ALD
Nitrogen, Nitrate	3.99	mg/L	.05	1	EPA 353.2	05/11	14:25	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:07	JCL
Nitrogen, Total Kjeldahl	0.58	mg/L	.25	1	EPA 351.2	05/16	16:41	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.1	mg/L	1	1	SM5310 C	05/12	17:18	ALD
RESIDUES								
Solids, Total Dissolved	220	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	100	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016662

Date Collected: 05/10/16 11:30
 Collected By: Client

Sample Desc: BM-8 Deep

Date Received: 05/10/16 14:10

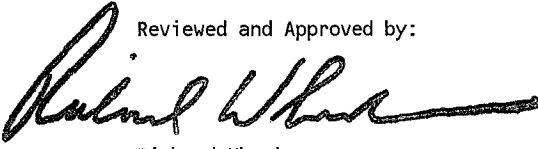
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.33	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	23:13	ALD
Nitrogen, Nitrate	3.00	mg/L	.05	1	EPA 353.2	05/11	14:26	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:08	JCL
Nitrogen, Total Kjeldahl	1.02	mg/L	.25	1	EPA 351.2	05/16	16:42	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	05/12	17:31	ALD
RESIDUES								
Solids, Total Dissolved	209	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	397	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	95	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016663

Date Collected: 05/10/16 10:30
 Collected By: Client

Sample Desc: BM-9 Surface

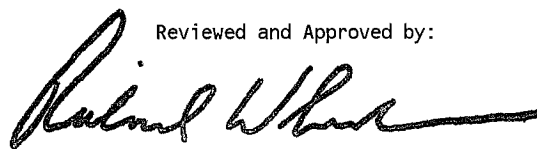
Date Received: 05/10/16 14:10

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	20	/100ml	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	290	mpn/100ml	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	23:27	ALD
Nitrogen, Nitrate	4.64	mg/L	.1	2	EPA 353.2	05/11	14:52	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:09	JCL
Nitrogen, Total Kjeldahl	0.76	mg/L	.25	1	EPA 351.2	05/16	16:43	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	05/12	17:43	ALD
RESIDUES								
Solids, Total Dissolved	239	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	127	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016663

Date Collected: 05/10/16 10:30
Collected By: Client

Sample Desc: BM-9 Surface

Date Received: 05/10/16 14:10

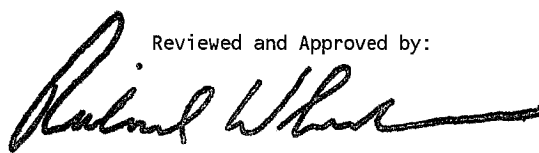
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016664

Date Collected: 05/10/16 10:30
 Collected By: Client

Sample Desc: BM-9 Mid-Depth

Date Received: 05/10/16 14:10

PWSID: 3060912

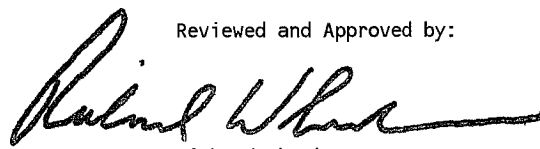
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	23:42	ALD
Nitrogen, Nitrate	4.64	mg/L	.2	2	EPA 353.2	05/11	14:55	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:10	JCL
Nitrogen, Total Kjeldahl	0.55	mg/L	.25	1	EPA 351.2	05/16	16:44	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.1	mg/L	1	1	SM5310 C	05/12	17:55	ALD
RESIDUES								
Solids, Total Dissolved	234	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	139	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016665
 Date Collected: 05/10/16 10:30
 Collected By: Client
 Date Received: 05/10/16 14:10

Sample Desc: BM-9 Deep

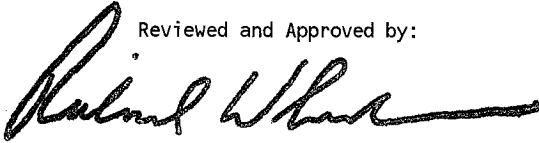
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	0.08	mg/L	.05	1	D6919-03	05/10	23:57	ALD
Nitrogen, Nitrate	3.69	mg/L	.05	1	EPA 353.2	05/11	14:31	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:13	JCL
Nitrogen, Total Kjeldahl	0.68	mg/L	.25	1	EPA 351.2	05/16	16:47	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	05/12	18:43	ALD
RESIDUES								
Solids, Total Dissolved	258	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	65	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	134	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016666
 Date Collected: 05/10/16 11:15
 Collected By: Client
 Date Received: 05/10/16 14:10

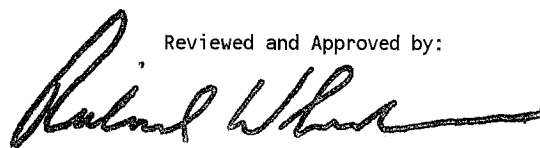
Sample Desc: BM-10 Surface

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	380	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:00	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	00:11	ALD
Nitrogen, Nitrate	4.77	mg/L	.1	2	EPA 353.2	05/11	14:56	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:14	JCL
Nitrogen, Total Kjeldahl	0.58	mg/L	.25	1	EPA 351.2	05/16	16:48	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.2	mg/L	1	1	SM5310 C	05/12	19:07	ALD
RESIDUES								
Solids, Total Dissolved	223	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	118	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016666
Date Collected: 05/10/16 11:15
Collected By: Client
Date Received: 05/10/16 14:10

Sample Desc: BM-10 Surface

PWSID: 3060912

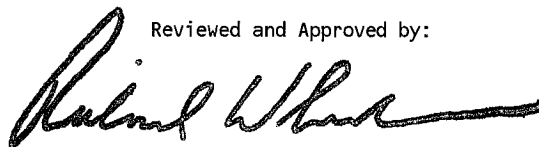
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016667

Date Collected: 05/10/16 11:15
 Collected By: Client

Sample Desc: BM-10 Mid-Depth

Date Received: 05/10/16 14:10

PWSID: 3060912

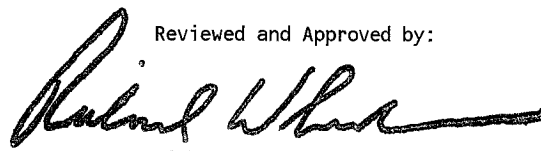
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	05/11	14:05	AEH
Phosphorus as P, Total	0.26	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	00:26	ALD
Nitrogen, Nitrate	4.75	mg/L	.1	2	EPA 353.2	05/11	14:57	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:15	JCL
Nitrogen, Total Kjeldahl	0.84	mg/L	.25	1	EPA 351.2	05/18	14:49	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	2.2	mg/L	1	1	SM5310 C	05/12	19:43	ALD
RESIDUES								
Solids, Total Dissolved	219	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	247	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	107	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0016668

Date Collected: 05/10/16 11:15
 Collected By: Client

Sample Desc: BM-10 Deep

Date Received: 05/10/16 14:10

PWSID: 3060912

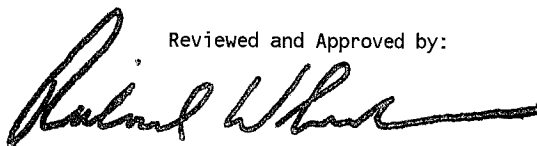
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.06	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	0.09	mg/L	.05	1	SM 4500P-E	05/11	14:05	AEH
Phosphorus as P, Total	0.46	mg/L	.01	1	SM 4500P-E	05/11	14:20	AEH
NITROGENS								
Nitrogen, Ammonia	0.13	mg/L	.05	1	D6919-03	05/10	00:40	ALD
Nitrogen, Nitrate	3.77	mg/L	.05	1	EPA 353.2	05/11	14:34	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:16	JCL
Nitrogen, Total Kjeldahl	3.65	mg/L	.25	1	EPA 351.2	05/18	14:51	JCL
OTHER								
Biochemical Oxygen Demand	5	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	3.8	mg/L	1	1	SM5310 C	05/12	19:56	ALD
RESIDUES								
Solids, Total Dissolved	231	mg/L	5	1	SM 2540C	05/11	13:35	TMH
Solids, Total Suspended	824	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	114	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

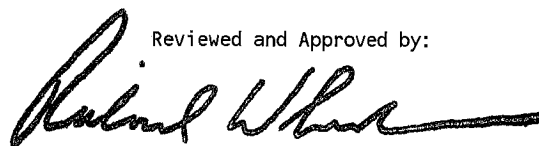
Date of Report: 05/24/16
 Lab ID: 3156-16-0016669
 Date Collected: 05/10/16 12:30
 Collected By: Client
 Date Received: 05/10/16 14:10

Sample Desc: BM-11 Surface

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	250	/100mL	2	1	SM 9222D	05/10	15:15	TNS
Total Coliform	2000	mpn/100mL	1	1	SM 9223B	05/11	11:25	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	05/10	16:35	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/11	14:05	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	05/11	14:25	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/10	00:55	ALD
Nitrogen, Nitrate	3.10	mg/L	.05	1	EPA 353.2	05/11	14:37	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/11	12:19	JCL
Nitrogen, Total Kjeldahl	0.46	mg/L	.25	1	EPA 351.2	05/18	14:51	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/10	15:30	EMW
Total Organic Carbon	1.9	mg/L	1	1	SM5310 C	05/12	20:08	ALD
RESIDUES								
Solids, Total Dissolved	103	mg/L	5	1	SM 2540C	05/11	13:55	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	05/11	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	32	mg/L	1	1	SM 2320 B	05/11	15:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAP accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0016669

Date Collected: 05/10/16 12:30
Collected By: Client

Sample Desc: BM-11 Surface

Date Received: 05/10/16 14:10

PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/10/2016 at 17:00.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler
Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Account: 3156 Work Order: 006223 Project Leader: rxw No: 274493
 Customer: David Wertz Chain of Custody
 Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000
 Remarks: Seasonal Monthly Blue Marsh Reservoir

Phone: 703-387-5516 Ext: WAGIK
 Total Sampling Time (hours): _____ Bottle Prep by: _____
 Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? Y
 Approved By: RS

Sample No: 16699 Desc: BM-1 Surface Date: 5/10/16
 nh3-n, tkn, alk, tds, tss, po4-p, toc, AI Time: 115
 no2-n, no3-n, d-po4-p, o-po4, bod, BN
 fc, tc, TNS

Sample No: 16650 Desc: BM-2 Surface Date: 5/10/16
 nh3-n, tkn, alk, tds, tss, po4-p, toc, AI Time: 0930
 no2-n, no3-n, d-po4-p, o-po4, bod, BN
 fc, tc, TNS

Sample No: 16651 Desc: BM-2 Mid-Depth Date: 5/10/16
 nh3-n, tkn, alk, tds, tss, po4-p, toc, AI Time: 0930
 no2-n, no3-n, d-po4-p, o-po4, bod, BN
 fc, tc, TNS

Relinquished by: [Signature] Received by: [Signature]
 Date: 5/10/16 Time: 130
 Date: 5/10/16 Time: 1410
 Sample entered by: DSM

Account: 3156

Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Chain of Custody

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Remarks:

Total Sampling Time (hours): _____
Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? N
Approved By: RES

Bottle Prep by: _____
Date: 5/10/16
Time: 0930

Sample No: 16653
4 Desc: BM-2 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅

Sample No: 16654
5 Desc: BM-5 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅

Sample No: 16654
6 Desc: BM-6 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅

Matrix: 0
Date: 5/10/16
Time: 1230
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0
Date: 5/10/16
Time: 1230
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: 0
Date: 5/10/16
Time: 0900
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 5/10/16 Time: 1:30
Date: 5/10/16 Time: 1410

Received for Laboratory by: [Signature]
Date: 5/10/16 Time: 1410
Sample entered by: 999

Account: 3156 Work Order: 006223
Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir

No: 274493

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Chain of Custody
Total Sampling Time (hours): _____ Bottle Prep by: _____
Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? (Y) N
Approved By: RES

Phone: 703-387-5516 Ext: _____

Samplers: WACIK

Sample No: 16655 7 Desc: BM-6 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod AA AA

Sample No: 16656 8 Desc: BM-6 Deep
nh3-n, tkn, Alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod AA AA

Sample No: 16657 9 Desc: BM-7 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod, fc, tc, AA AA

Matrix: 0 Date: 5/10/16
Time: 0900
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16
Time: 0700
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16
Time: 1000
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 5/10/16 Time: 130

Relinquished by: [Signature] Received by: [Signature]
Date: 5/10/16 Time: 1350

Received for Laboratory by: [Signature]
Date: 5/10/16 Time: 1410

Sample entered by: ESM

Account: 3156 Work Order: 006223 Project Leader: ixw No: 274493
Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Chain of Custody

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 9 Deg C If Temp Unacceptable, On Ice? Y N
Approved By: RES

Sample No: 16658 Desc: BM-7 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
AA
no2-n, no3-n, d-po4-p, o-po4, bod₅
AA

Sample No: 11 Desc: BM-7 Deep
16659
nh3-n, tkn, alk, tds, tss, po4-p, toc,
AA
no2-n, no3-n, d-po4-p, o-po4, bod₅
AA

Sample No: 12 Desc: BM-8 Surface
16660
nh3-n, tkn, alk, tds, tss, po4-p, toc,
AA
no2-n, no3-n, d-po4-p, o-po4, bod₅
fc, tc
TNS

Matrix: 0 Date: 5/10/16
Time: 1000
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16
Time: 1000
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16
Time: 1130
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 5/10/16 Time: 130
5/10/16 1350

Received for Laboratory by: [Signature]
Date: 5/10/16 Time: 1410

Sample entered by: OSM

Account: 3156 Work Order: 006223
Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

No: 274493

Chain of Custody

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? N
Approved By: RES

16661
Sample No: 13 Desc: BM-8 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
sw AH AH

16662
Sample No: 14 Desc: BM-8 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
sw AH AH

16663
Sample No: 15 Desc: BM-9 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
fc, tc
sw AH AH

Matrix: 0 Date: 5/10/16
Time: 11:30
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16
Time: 11:30
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16
Time: 10:30
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature]
Date: 5/10/16 Time: 130

Received by: [Signature]
Date: 5/10/16 Time: 1350

Received for Laboratory by: [Signature]
Date: 5/10/16 Time: 1410

Sample entered by: RES

Account: 3156 Work Order: 006223 Project Leader: rxw No: 274493

Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: WAGIK

Samplers: 16664

Sample No: 16 Desc: BM-9 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅

Sample No: 17 Desc: BM-9 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅

Sample No: 18 Desc: BM-10 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅

fg, tc, NS

Chain of Custody

Remarks:

Total Sampling Time (hours):
Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RES

Matrix: 0 Date: 5/10/16 Time: 1030
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16 Time: 1030
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 5/10/16 Time: 1115
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspac
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 5/10/16 1350 Time: 130
Received for Laboratory by: [Signature]
Date: 5/10/16 Time: 1410

Sample entered by: [Signature]

Account: 3156

Work Order: 006223

Project Leader: rxw

No: 274493

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: (Signature)

=====
 Sample No: 16667 19 Desc: BM-10 Mid-Depth
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod₅
 Matrix: o Date: 5/10/16
 Time: 1115

=====
 Sample No: 16668 20 Desc: BM-10 Deep
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod₅
 Matrix: o Date: 5/10/16
 Time: 1115

=====
 Sample No: 16669 21 Desc: BM-11 Surface
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod₅
 Matrix: o Date: 5/10/16
 Time: 1230

fc, tc,
TND

Relinquished by: (Signature) Received by: (Signature)
 Date: 5/10/16 Time: 130
 Date: 5/10/16 Time: 1410

Sample entered by: ESM

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017989

Date Collected: 06/06/16 13:45
 Collected By: Client

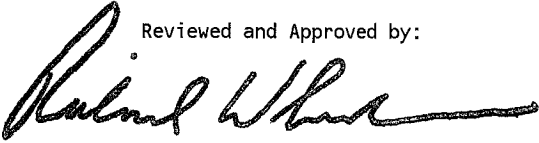
Sample Desc: BM-1 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	5	/100ml	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:20	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	06/07	13:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	14:37	JCL
Nitrogen, Nitrate	4.08	mg/L	.05	1	EPA 353.2	06/07	16:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:01	JCL
Nitrogen, Total Kjeldahl	0.70	mg/L	.25	1	EPA 351.2	06/09	12:33	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.9	mg/L	1	1	SM5310 C	06/09	13:34	HRG
RESIDUES								
Solids, Total Dissolved	170	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	123	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0017989

Date Collected: 06/06/16 13:45
Collected By: Client

Sample Desc: BM-1 Surface

Date Received: 06/06/16 14:22

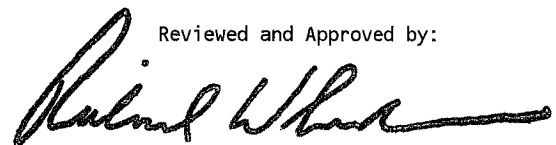
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017990

Date Collected: 06/06/16 10:00
 Collected By: Client

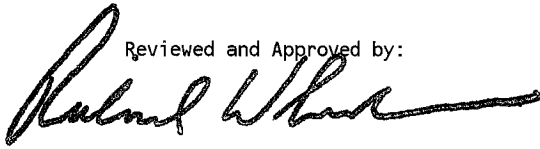
Sample Desc: BM-2 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	200	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:20	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	06/07	13:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	14:52	JCL
Nitrogen, Nitrate	4.17	mg/L	.05	1	EPA 353.2	06/07	16:49	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:04	JCL
Nitrogen, Total Kjeldahl	0.69	mg/L	.25	1	EPA 351.2	06/09	12:36	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	06/09	14:12	HRG
RESIDUES								
Solids, Total Dissolved	179	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	101	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0017990

Date Collected: 06/06/16 10:00
Collected By: Client

Sample Desc: BM-2 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

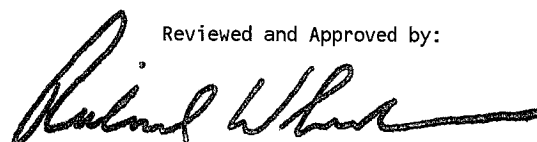
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

- 02 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017991

Date Collected: 06/06/16 10:00
 Collected By: Client

Sample Desc: BM-2 Mid-Depth

Date Received: 06/06/16 14:22

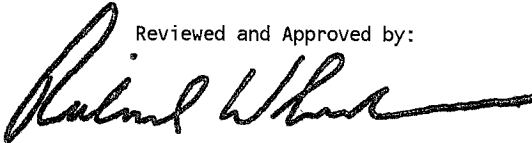
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:20	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	06/07	13:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	15:07	JCL
Nitrogen, Nitrate	4.39	mg/L	.05	1	EPA 353.2	06/07	16:52	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:05	JCL
Nitrogen, Total Kjeldahl	0.54	mg/L	.25	1	EPA 351.2	06/09	12:37	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	06/09	14:24	HRG
RESIDUES								
Solids, Total Dissolved	197	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	105	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017992

Date Collected: 06/06/16 10:00
 Collected By: Client

Sample Desc: BM-2 Deep

Date Received: 06/06/16 14:22

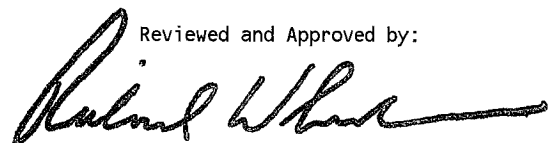
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	06/07	13:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.14	mg/L	.05	1	D6919-03	06/07	15:21	JCL
Nitrogen, Nitrate	3.01	mg/L	.05	1	EPA 353.2	06/07	16:53	JCL
Nitrogen, Nitrite	0.06	mg/L	.05	1	EPA 353.2	06/07	15:06	JCL
Nitrogen, Total Kjeldahl	0.70	mg/L	.25	1	EPA 351.2	06/09	12:38	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	06/09	14:36	HRG
RESIDUES								
Solids, Total Dissolved	207	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	138	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017993

Date Collected: 06/06/16 13:15
 Collected By: Client

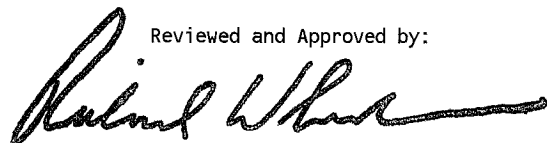
Sample Desc: BM-5 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2600	/100mL	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.06	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	0.14	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.18	mg/L	.01	1	SM 4500P-E	06/07	13:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	15:36	JCL
Nitrogen, Nitrate	6.98	mg/L	.05	1	EPA 353.2	06/07	16:54	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:07	JCL
Nitrogen, Total Kjeldahl	0.76	mg/L	.25	1	EPA 351.2	06/09	12:39	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	06/09	14:48	HRG
RESIDUES								
Solids, Total Dissolved	310	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	180	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0017993

Date Collected: 06/06/16 13:15
Collected By: Client

Sample Desc: BM-5 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

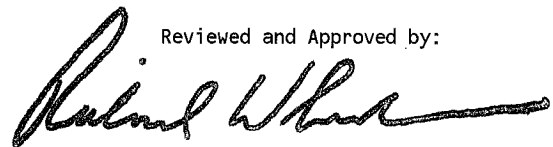
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.

- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017994

Date Collected: 06/06/16 09:00
 Collected By: Client

Sample Desc: BM-6 Surface

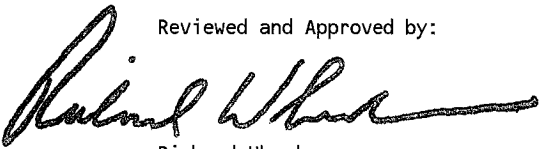
Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	5	/100mL	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	200	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	06/07	13:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	15:50	JCL
Nitrogen, Nitrate	4.15	mg/L	.05	1	EPA 353.2	06/07	16:55	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:08	JCL
Nitrogen, Total Kjeldahl	0.69	mg/L	.25	1	EPA 351.2	06/09	12:40	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.4	mg/L	1	1	SM5310 C	06/09	15:01	HRG
RESIDUES								
Solids, Total Dissolved	174	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	95	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0017994

Date Collected: 06/06/16 09:00
Collected By: Client

Sample Desc: BM-6 Surface

Date Received: 06/06/16 14:22

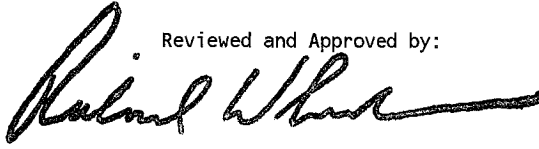
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017995

Date Collected: 06/06/16 09:00
 Collected By: Client

Sample Desc: BM-6 Mid-Depth

Date Received: 06/06/16 14:22

PWSID: 3060912

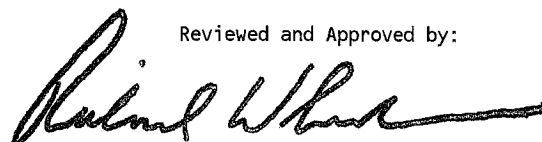
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	06/07	13:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	16:05	JCL
Nitrogen, Nitrate	4.42	mg/L	.05	1	EPA 353.2	06/07	16:56	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:09	JCL
Nitrogen, Total Kjeldahl	0.56	mg/L	.25	1	EPA 351.2	06/09	12:41	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	06/09	15:13	HRG
RESIDUES								
Solids, Total Dissolved	186	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	115	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017996
 Date Collected: 06/06/16 09:00
 Collected By: Client
 Date Received: 06/06/16 14:22

Sample Desc: BM-6 Deep

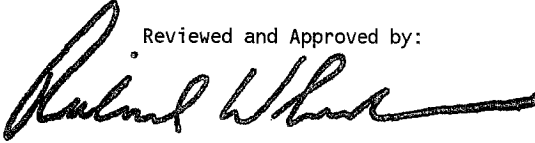
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.07	mg/L	.01	1	SM 4500P-E	06/07	13:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.29	mg/L	.05	1	D6919-03	06/07	16:20	JCL
Nitrogen, Nitrate	2.66	mg/L	.05	1	EPA 353.2	06/07	16:57	JCL
Nitrogen, Nitrite	0.06	mg/L	.05	1	EPA 353.2	06/07	15:10	JCL
Nitrogen, Total Kjeldahl	1.13	mg/L	.25	1	EPA 351.2	06/09	12:42	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 c	06/09	15:25	HRG
RESIDUES								
Solids, Total Dissolved	231	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	149	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017997

Date Collected: 06/06/16 10:20
 Collected By: Client

Sample Desc: BM-7 Surface

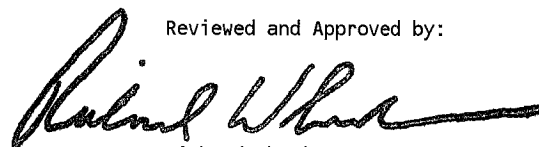
Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	5	/100ml	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	410	mpn/100ml	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	0.16	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.20	mg/L	.01	1	SM 4500P-E	06/07	13:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	16:34	JCL
Nitrogen, Nitrate	4.17	mg/L	.05	1	EPA 353.2	06/07	17:00	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:13	JCL
Nitrogen, Total Kjeldahl	0.68	mg/L	.25	1	EPA 351.2	06/09	12:44	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.7	mg/L	1	1	SM5310 C	06/09	15:37	HRG
RESIDUES								
Solids, Total Dissolved	195	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	111	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017997

Date Collected: 06/06/16 10:20
 Collected By: Client

Sample Desc: BM-7 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

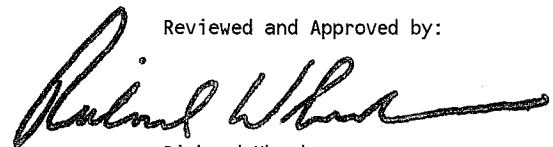
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.

- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017998

Date Collected: 06/06/16 10:20
 Collected By: Client

Sample Desc: BM-7 Mid-Depth

Date Received: 06/06/16 14:22

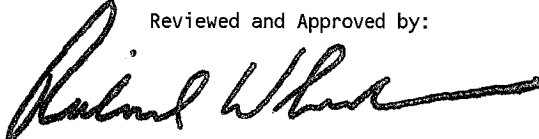
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:25	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	06/07	13:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.07	mg/L	.05	1	D6919-03	06/07	17:18	JCL
Nitrogen, Nitrate	4.46	mg/L	.05	1	EPA 353.2	06/07	17:01	JCL
Nitrogen, Nitrite	0.06	mg/L	.05	1	EPA 353.2	06/07	15:14	JCL
Nitrogen, Total Kjeldahl	0.79	mg/L	.25	1	EPA 351.2	06/09	12:45	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.9	mg/L	1	1	SM5310 C	06/09	15:50	HRG
RESIDUES								
Solids, Total Dissolved	210	mg/L	5	1	SM 2540C	06/09	13:05	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	06/09	13:05	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	123	mg/L	1	1	SM 2320 B	06/16	10:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0017999

Date Collected: 06/06/16 10:20
 Collected By: Client

Sample Desc: BM-7 Deep

Date Received: 06/06/16 14:22

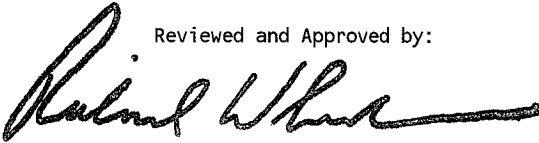
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	14:50	AEH
Phosphorus as P, Dissolved	0.07	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.15	mg/L	.01	1	SM 4500P-E	06/07	13:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.06	mg/L	.05	1	D6919-03	06/07	17:33	JCL
Nitrogen, Nitrate	4.13	mg/L	.05	1	EPA 353.2	06/07	17:02	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:15	JCL
Nitrogen, Total Kjeldahl	2.60	mg/L	.25	1	EPA 351.2	06/09	12:46	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	06/09	16:27	HRG
RESIDUES								
Solids, Total Dissolved	224	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	84	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	127	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018000

Date Collected: 06/06/16 11:50
 Collected By: Client

Sample Desc: BM-8 Surface

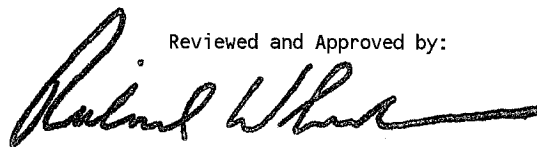
Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	10	/100mL	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	980	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	17:47	JCL
Nitrogen, Nitrate	3.81	mg/L	.05	1	EPA 353.2	06/07	17:02	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:17	JCL
Nitrogen, Total Kjeldahl	0.73	mg/L	.25	1	EPA 351.2	06/09	12:47	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.4	mg/L	1	1	SM5310 C	06/09	17:42	HRG
RESIDUES								
Solids, Total Dissolved	191	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	111	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0018000

Date Collected: 06/06/16 11:50
Collected By: Client

Sample Desc: BM-8 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

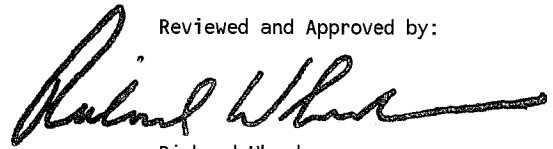
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018001

Date Collected: 06/06/16 11:50
 Collected By: Client

Sample Desc: BM-8 Mid-Depth

Date Received: 06/06/16 14:22

PWSID: 3060912

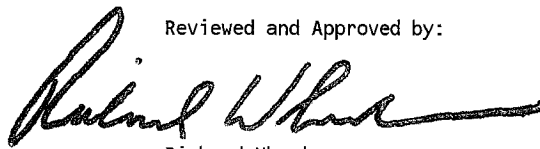
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.07	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	18:02	JCL
Nitrogen, Nitrate	3.67	mg/L	.05	1	EPA 353.2	06/07	17:05	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:18	JCL
Nitrogen, Total Kjeldahl	0.87	mg/L	.25	1	EPA 351.2	06/09	12:50	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.0	mg/L	1	1	SM5310 C	06/09	17:54	HRG
RESIDUES								
Solids, Total Dissolved	200	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	93	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018002

Date Collected: 06/06/16 11:50
 Collected By: Client

Sample Desc: BM-8 Deep

Date Received: 06/06/16 14:22

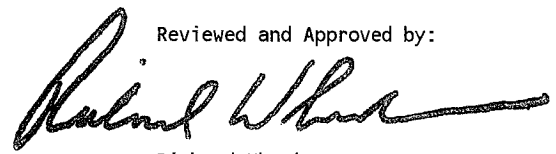
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.11	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.13	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.08	mg/L	.05	1	D6919-03	06/07	18:16	JCL
Nitrogen, Nitrate	3.42	mg/L	.05	1	EPA 353.2	06/07	17:06	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:19	JCL
Nitrogen, Total Kjeldahl	0.74	mg/L	.25	1	EPA 351.2	06/09	12:51	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.6	mg/L	1	1	SM5310 C	06/09	18:06	HRG
RESIDUES								
Solids, Total Dissolved	215	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	96	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018003

Date Collected: 06/06/16 10:50
 Collected By: Client

Sample Desc: BM-9 Surface

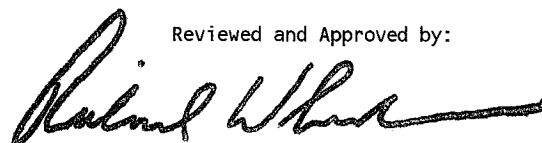
Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	8	/100mL	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	390	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.11	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.12	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	18:31	JCL
Nitrogen, Nitrate	4.31	mg/L	.05	1	EPA 353.2	06/07	17:07	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:20	JCL
Nitrogen, Total Kjeldahl	0.57	mg/L	.25	1	EPA 351.2	06/09	12:52	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.9	mg/L	1	1	SM5310 C	06/09	18:18	HRG
RESIDUES								
Solids, Total Dissolved	235	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	128	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0018003

Date Collected: 06/06/16 10:50
Collected By: Client

Sample Desc: BM-9 Surface

Date Received: 06/06/16 14:22

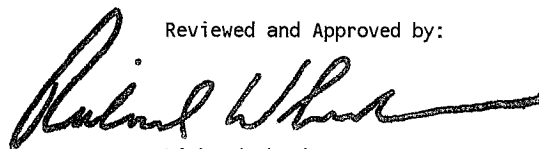
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018004

Date Collected: 06/06/16 10:50
 Collected By: Client

Sample Desc: BM-9 Mid-Depth

Date Received: 06/06/16 14:22

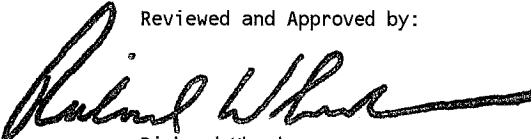
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.08	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	18:46	JCL
Nitrogen, Nitrate	4.31	mg/L	.05	1	EPA 353.2	06/07	17:08	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:21	JCL
Nitrogen, Total Kjeldahl	0.70	mg/L	.25	1	EPA 351.2	06/09	12:53	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.0	mg/L	1	1	SM5310 C	06/09	18:30	HRG
RESIDUES								
Solids, Total Dissolved	235	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	107	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018005

Date Collected: 06/06/16 10:50
 Collected By: Client

Sample Desc: BM-9 Deep

Date Received: 06/06/16 14:22

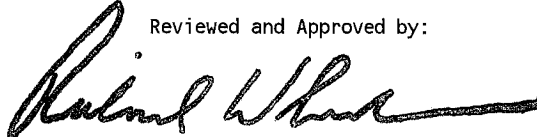
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.13	mg/L	.05	1	D6919-03	06/07	19:00	JCL
Nitrogen, Nitrate	3.45	mg/L	.05	1	EPA 353.2	06/07	17:11	JCL
Nitrogen, Nitrite	0.05	mg/L	.05	1	EPA 353.2	06/07	15:24	JCL
Nitrogen, Total Kjeldahl	0.74	mg/L	.25	1	EPA 351.2	06/09	12:56	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.6	mg/L	1	1	SM5310 C	06/09	18:42	HRG
RESIDUES								
Solids, Total Dissolved	240	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	146	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018006

Date Collected: 06/06/16 11:15
 Collected By: Client

Sample Desc: BM-10 Surface

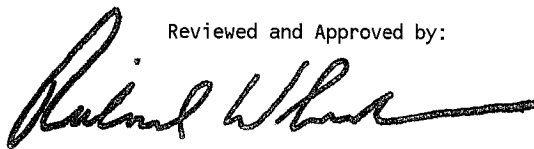
Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	8	/100mL	2	1	SM 9222D	06/06	15:40	TNS
Total Coliform	1100	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	19:15	JCL
Nitrogen, Nitrate	4.42	mg/L	.05	1	EPA 353.2	06/07	17:12	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:25	JCL
Nitrogen, Total Kjeldahl	0.82	mg/L	.25	1	EPA 351.2	06/09	12:57	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	06/09	18:55	HRG
RESIDUES								
Solids, Total Dissolved	226	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	139	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018006

Date Collected: 06/06/16 11:15
 Collected By: Client

Sample Desc: BM-10 Surface

Date Received: 06/06/16 14:22

PWSID: 3060912

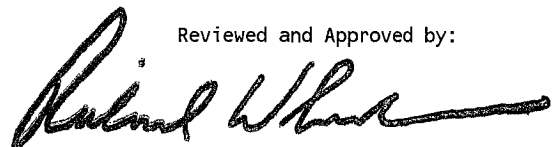
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.

- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018007

Date Collected: 06/06/16 11:15
 Collected By: Client

Sample Desc: BM-10 Mid-Depth

Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	19:29	JCL
Nitrogen, Nitrate	4.23	mg/L	.05	1	EPA 353.2	06/07	17:13	JCL
Nitrogen, Nitrite	0.05	mg/L	.05	1	EPA 353.2	06/07	15:26	JCL
Nitrogen, Total Kjeldahl	0.79	mg/L	.25	1	EPA 351.2	06/16	17:18	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.0	mg/L	1	1	SM5310 C	06/09	19:07	HRG
RESIDUES								
Solids, Total Dissolved	214	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	123	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018008

Date Collected: 06/06/16 11:15
 Collected By: Client

Sample Desc: BM-10 Deep

Date Received: 06/06/16 14:22

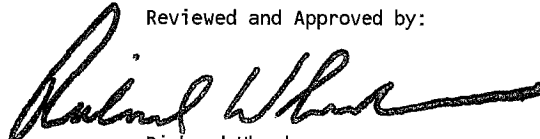
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.08	mg/L	.05	1	SM 4500P-E	06/07	13:30	AEH
Phosphorus as P, Total	0.09	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.28	mg/L	.05	1	D6919-03	06/07	19:44	JCL
Nitrogen, Nitrate	3.48	mg/L	.05	1	EPA 353.2	06/07	17:14	JCL
Nitrogen, Nitrite	0.12	mg/L	.05	1	EPA 353.2	06/07	15:27	JCL
Nitrogen, Total Kjeldahl	1.33	mg/L	.25	1	EPA 351.2	06/16	17:21	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	06/09	19:19	HRG
RESIDUES								
Solids, Total Dissolved	251	mg/L	5	1	SM 2540C	06/09	13:35	TMH
Solids, Total Suspended	56	mg/L	3	1	SM 2540D	06/09	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	152	mg/L	1	1	SM 2320 B	06/16	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/21/16
 Lab ID: 3156-16-0018009

Date Collected: 06/06/16 13:15
 Collected By: Client

Sample Desc: BM-11 Surface

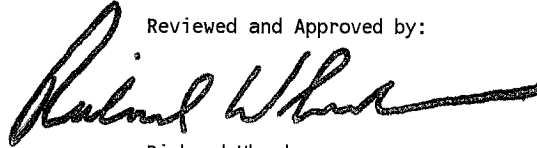
Date Received: 06/06/16 14:22

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	6400	/100mL	2	1	SM 9222D	06/06	15:50	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	06/07	10:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	06/06	15:00	AEH
Phosphorus as P, Dissolved	0.07	mg/L	.05	1	SM 4500P-E	06/07	13:35	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	06/07	13:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/07	20:43	JCL
Nitrogen, Nitrate	4.95	mg/L	.05	1	EPA 353.2	06/07	17:17	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/07	15:30	JCL
Nitrogen, Total Kjeldahl	0.68	mg/L	.25	1	EPA 351.2	06/16	17:22	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/06	15:30	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	06/09	19:44	HRG
RESIDUES								
Solids, Total Dissolved	232	mg/L	5	1	SM 2540C	06/09	14:00	TMH
Solids, Total Suspended	12	mg/L	3	1	SM 2540D	06/09	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	141	mg/L	1	1	SM 2320 B	06/17	12:00	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0018009

Date Collected: 06/06/16 13:15
Collected By: Client

Sample Desc: BM-11 Surface

Date Received: 06/06/16 14:22

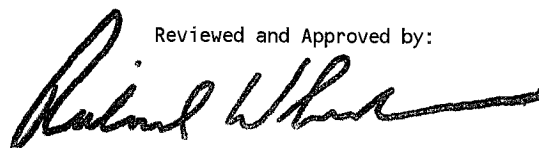
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/06/2016 at 16:45.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

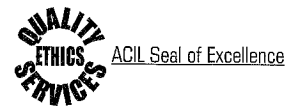
Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 275160

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600 Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? Y N Approved By: CWL

Remarks:

Sample No: 1 Desc: BM-1 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod AW

TNS fc, tc,

17989

Sample No: 2 Desc: BM-2 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod AW

TNS fc, tc,

17990

Sample No: 3 Desc: BM-2 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod AW

17991

Matrix: o Date: 6/6/16 Time: 1:45

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 6/6/16 Time: 1:00

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 6/6/16 Time: 1:00

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/6/16 Time: 2:00 1400

Date: 6/6/16 Time: 1422

Sample entered by: 9PM

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 275160

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600 Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? Y N Approved By: OML

17992 Sample No: 4 Desc: BM-2 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
HLG *AK*

17993 Sample No: 5 Desc: BM-5 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
HLG *AK*
fc, tds

17994 Sample No: 6 Desc: BM-6 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
HLG *AK*
fc, tds

Matrix: o Date: 6/16/16
Time: 1000
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 6/16/16
Time: 1115
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 6/16/16
Time: 0900
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/16/16 Time: 2:00 1400

Date: 6/16/16 Time: 1422

Sample entered by: OM

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 275160
Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? (Y) N
Approved By: CML

17995 Sample No: 7 Desc: BM-6 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,
ALA
no2-n, no3-n, d-po4-p, o-po4, bod₅
ARC

17996 Sample No: 8 Desc: BM-6 Deep

nh3-n, tkn, Alk, tds, tss, po4-p, toc,
ALA
no2-n, no3-n, d-po4-p, o-po4, bod₅
ARC

17997 Sample No: 9 Desc: BM-7 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,
ALA
no2-n, no3-n, d-po4-p, o-po4, bod₅
ARC
fc, tds
KTS

Matrix: o Date: 6/6/16
Time: 0902

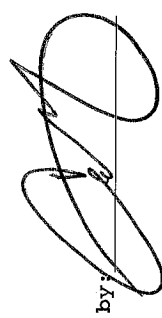
- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 6/6/16
Time: 0900

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

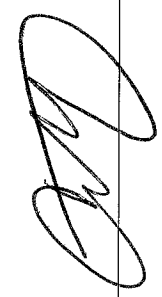
Matrix: o Date: 6/6/16
Time: 1030

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;



Relinquished by: _____ Received by: _____

Date: 6/6/16 Time: 2:00
1400



Received for laboratory by: _____

Date: 6/6/16 Time: 1422

Sample entered by: OGM

Chain of Custody

Account: 3156
Customer: David Wertz

Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

No: 275160

Project Leader: rxw

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Phone: 703-387-5516 Ext: _____

Samplers: WACIK

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? (Y) N
Approved By: CMC

17998 Sample No: 10 Desc: BM-7 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod AW
HRG

17999 Sample No: 11 Desc: BM-7 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod AW
HRG

18000 Sample No: 12 Desc: BM-8 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod AW
fc, tc, HRG

Matrix: o Date: 6/6/16
Time: 17:20
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 6/6/16
Time: 10:20
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 6/6/16
Time: 11:50
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/6/16 Time: 2:00
1400

Date: 6/6/16 Time: 1422

Sample entered by: RSW

Chain of Custody

Account: 3156 Work Order: 006223
Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

No: 275160

Project Leader: rxw

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Phone: 703-387-5516 Ext: _____

Samplers: WASIC

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? (Y)
Approved By: OML

=====

18001 Sample No: 13 Desc: BM-8 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW

Matrix: o Date: 6/6/16
Time: 1150
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

18002 Sample No: 14 Desc: BM-8 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW

Matrix: o Date: 6/6/16
Time: 1150
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

18003 Sample No: 15 Desc: BM-9 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW
fc, tc, MS

Matrix: o Date: 6/6/16
Time: 1050
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/6/16 Time: 2:00
1400

Date: 6/6/16 Time: 1422

Sample entered by: DSM

Chain of Custody

Account: 3156
Customer: David Wertz

Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

No: 275160

Project Leader: rxw

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WAcik

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? Y
Approved By: CML

18004 Sample No: 16 Desc: BM-9 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW

18005 Sample No: 17 Desc: BM-9 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW

18006 Sample No: 18 Desc: BM-10 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW
fc, tc, RS

Matrix: o Date: 6/6/16
Time: 1050
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 6/6/16
Time: 1050
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 6/6/16
Time: 1115
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/6/16 Time: 2:40
1420

Date: 6/6/16 Time: 1422

Sample entered by: RS

Chain of Custody

Account: 3156

Work Order: 006223
Project Leader: rxw

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

No: 275160

Customer: David Wertz

Remarks:

Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Total Sampling Time (hours): _____ Bottle Prep by: _____

Phone: 703-387-5516 Ext: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: CML

Samplers: WACIK

Sample No: 19 Desc: BM-10 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod SW

Matrix: o Date: 6/6/16
Time: 1115

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Sample No: 20 Desc: BM-10 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod SW

Matrix: o Date: 6/6/16
Time: 1115

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Sample No: 21 Desc: BM-11 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod SW

Matrix: o Date: 6/6/16
Time: 1115

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/6/16 Time: 2:00
1400

Date: 6/16/16 Time: 1422

Sample entered by: DSM

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

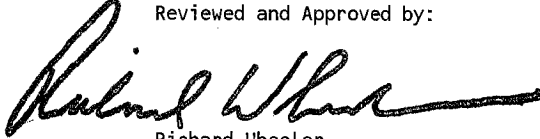
Date of Report: 08/03/16
 Lab ID: 3156-16-0018911
 Date Collected: 07/18/16 12:40
 Collected By: Client
 Date Received: 07/18/16 13:20

Sample Desc: BM-1 Surface

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	6	/100ml	2	1	SM 9222D	07/18	14:00	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:15	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/19	15:35	AEH
NITROGENS								
Nitrogen, Ammonia	0.25	mg/L	.05	1	D6919-03	07/19	12:13	JCL
Nitrogen, Nitrate	2.25	mg/L	.05	1	EPA 353.2	07/19	16:32	JCL
Nitrogen, Nitrite	0.12	mg/L	.05	1	EPA 353.2	07/19	14:12	JCL
Nitrogen, Total Kjeldahl	1.03	mg/L	.25	1	EPA 351.2	07/20	17:33	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	07/19	11:04	ALD
RESIDUES								
Solids, Total Dissolved	254	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	151	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018911

Date Collected: 07/18/16 12:40
Collected By: Client

Sample Desc: BM-1 Surface

Date Received: 07/18/16 13:20

PWSID: 3060912

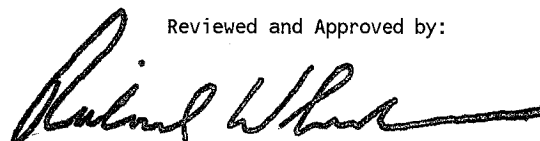
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
-----	-----	-----	-----	-----	-----	-----	-----

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018912

Date Collected: 07/18/16 09:15
 Collected By: Client

Sample Desc: BM-2 Surface

Date Received: 07/15/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	3	/100mL	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:15	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	07/19	15:35	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	12:28	JCL
Nitrogen, Nitrate	2.94	mg/L	.1	2	EPA 353.2	07/19	16:33	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:15	JCL
Nitrogen, Total Kjeldahl	1.07	mg/L	.25	1	EPA 351.2	07/20	17:36	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	5.6	mg/L	1	1	SM5310 c	07/19	11:29	ALD
RESIDUES								
Solids, Total Dissolved	205	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	94	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018912

Date Collected: 07/18/16 09:15
 Collected By: Client

Sample Desc: BM-2 Surface

Date Received: 07/15/16 13:20

PWSID: 3060912

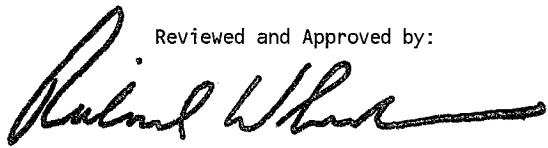
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
-----	-----	-----	-----	-----	-----	-----	-----

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018913

Date Collected: 07/18/16 09:15
 Collected By: Client

Sample Desc: BM-2 Mid-Depth

Date Received: 07/15/16 13:20

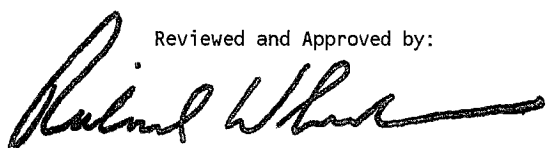
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	07/19	15:15	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	07/19	15:35	AEH
NITROGENS								
Nitrogen, Ammonia	0.17	mg/L	.05	1	D6919-03	07/19	12:43	JCL
Nitrogen, Nitrate	3.16	mg/L	.1	2	EPA 353.2	07/19	16:36	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:16	JCL
Nitrogen, Total Kjeldahl	0.73	mg/L	.25	1	EPA 351.2	07/20	17:37	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.2	mg/L	1	1	SM5310 C	07/19	11:41	ALD
RESIDUES								
Solids, Total Dissolved	247	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	132	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018914

Date Collected: 07/18/16 09:15
 Collected By: Client

Sample Desc: BM-2 Deep

Date Received: 07/18/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/l	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	0.05	mg/l	.05	1	SM 4500P-E	07/19	15:15	AEH
Phosphorus as P, Total	0.06	mg/l	.01	1	SM 4500P-E	07/19	15:35	AEH
NITROGENS								
Nitrogen, Ammonia	0.69	mg/l	.05	1	D6919-03	07/19	12:57	JCL
Nitrogen, Nitrate	1.29	mg/l	.05	1	EPA 353.2	07/19	17:05	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/19	14:17	JCL
Nitrogen, Total Kjeldahl	1.23	mg/l	.25	1	EPA 351.2	07/20	17:38	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/l	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.0	mg/l	1	1	SM5310 C	07/19	12:43	ALD
RESIDUES								
Solids, Total Dissolved	264	mg/l	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	6	mg/l	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	161	mg/l	1	1	SM 2320 B	07/19	10:10	AEH

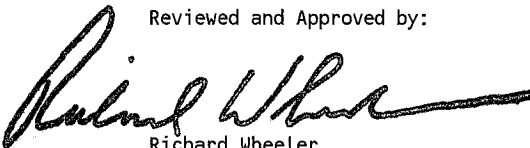
COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

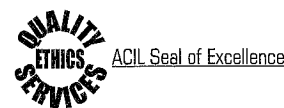

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018915

Date Collected: 07/18/16 12:05
 Collected By: Client

Sample Desc: BM-5 Surface

Date Received: 07/18/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	88	/100ml	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	0.11	mg/L	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.12	mg/L	.01	1	SM 4500P-E	07/19	15:35	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	13:12	JCL
Nitrogen, Nitrate	3.86	mg/L	.1	2	EPA 353.2	07/19	16:37	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:18	JCL
Nitrogen, Total Kjeldahl	0.64	mg/L	.25	1	EPA 351.2	07/20	17:39	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	07/19	12:55	ALD
RESIDUES								
Solids, Total Dissolved	284	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	154	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018915

Date Collected: 07/18/16 12:05
Collected By: Client

Sample Desc: BM-5 Surface

Date Received: 07/18/16 13:20

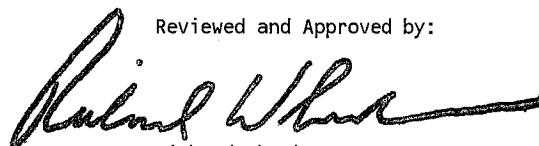
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018916
 Date Collected: 07/18/16 08:40
 Collected By: Client
 Date Received: 07/18/16 13:20

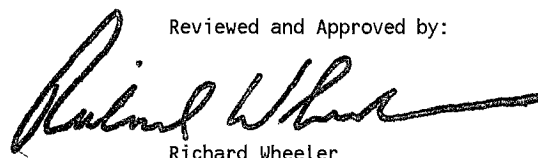
Sample Desc: BM-6 Surface

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	3	/100ml	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.12	mg/L	.01	1	SM 4500P-E	07/19	15:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	13:26	JCL
Nitrogen, Nitrate	2.89	mg/L	.1	2	EPA 353.2	07/19	16:38	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:18	JCL
Nitrogen, Total Kjeldahl	0.71	mg/L	.25	1	EPA 351.2	07/20	17:40	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.9	mg/L	1	1	SM5310 C	07/19	13:07	ALD
RESIDUES								
Solids, Total Dissolved	200	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	86	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018916

Date Collected: 07/18/16 08:40
Collected By: Client

Sample Desc: BM-6 Surface

Date Received: 07/18/16 13:20

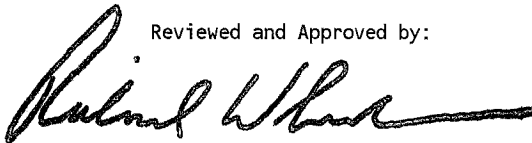
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018917

Date Collected: 07/18/16 08:40
 Collected By: Client

Sample Desc: BM-6 Mid-Depth

Date Received: 07/18/16 13:20

PWSID: 3060912

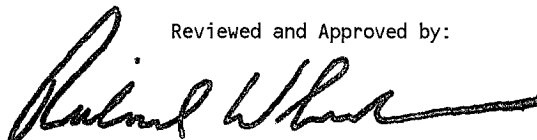
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/19	15:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.13	mg/L	.05	1	D6919-03	07/19	13:41	JCL
Nitrogen, Nitrate	2.82	mg/L	.05	1	EPA 353.2	07/19	16:39	JCL
Nitrogen, Nitrite	0.27	mg/L	.05	1	EPA 353.2	07/19	14:19	JCL
Nitrogen, Total Kjeldahl	0.55	mg/L	.25	1	EPA 351.2	07/20	17:41	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	07/19	13:19	ALD
RESIDUES								
Solids, Total Dissolved	254	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	144	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018918

Date Collected: 07/18/16 08:40
 Collected By: Client

Sample Desc: BM-6 Deep

Date Received: 07/18/16 13:20

PWSID: 3060912

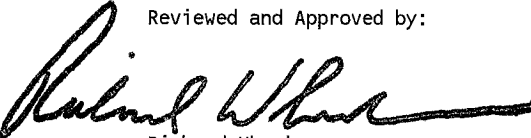
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	07/19	15:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.38	mg/l	.05	1	D6919-03	07/19	14:25	JCL
Nitrogen, Nitrate	2.21	mg/l	.05	1	EPA 353.2	07/19	16:40	JCL
Nitrogen, Nitrite	0.16	mg/l	.05	1	EPA 353.2	07/19	14:20	JCL
Nitrogen, Total Kjeldahl	0.82	mg/l	.25	1	EPA 351.2	07/20	17:42	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	1.8	mg/l	1	1	SM5310 C	07/19	13:42	ALD
RESIDUES								
Solids, Total Dissolved	251	mg/l	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	4	mg/l	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	154	mg/l	1	1	SM 2320 B	07/19	10:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018919

Date Collected: 07/18/16 09:40
 Collected By: Client

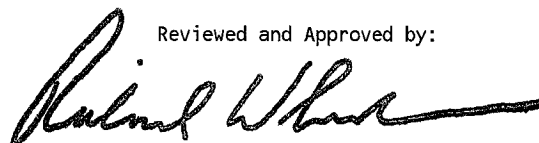
Sample Desc: BM-7 Surface

Date Received: 07/18/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/19	15:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	14:39	JCL
Nitrogen, Nitrate	2.92	mg/L	.1	2	EPA 353.2	07/19	16:43	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:23	JCL
Nitrogen, Total Kjeldahl	0.99	mg/L	.25	1	EPA 351.2	07/20	17:44	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	07/19	13:55	ALD
RESIDUES								
Solids, Total Dissolved	211	mg/L	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	95	mg/L	1	1	SM 2320 B	07/19	10:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018919

Date Collected: 07/18/16 09:40
Collected By: Client

Sample Desc: BM-7 Surface

Date Received: 07/18/16 13:20

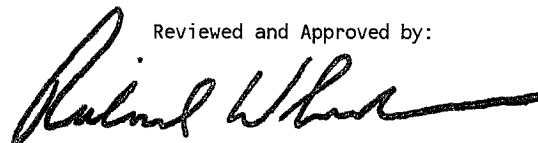
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018920
 Date Collected: 07/18/16 09:40
 Collected By: Client
 Date Received: 07/18/16 13:20

Sample Desc: BM-7 Mid-Depth

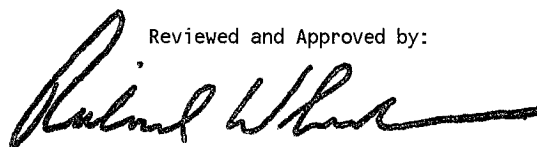
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	07/19	15:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.20	mg/l	.05	1	D6919-03	07/19	14:54	JCL
Nitrogen, Nitrate	3.18	mg/l	.1	2	EPA 353.2	07/19	16:44	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/19	14:24	JCL
Nitrogen, Total Kjeldahl	0.92	mg/l	.25	1	EPA 351.2	07/20	17:45	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.4	mg/l	1	1	SM5310 C	07/19	14:07	ALD
RESIDUES								
Solids, Total Dissolved	145	mg/l	5	1	SM 2540C	07/20	12:55	TMH
Solids, Total Suspended	5	mg/l	3	1	SM 2540D	07/20	12:55	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	124	mg/l	1	1	SM 2320 B	07/19	10:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018921

Date Collected: 07/18/16 09:40
 Collected By: Client

Sample Desc: BM-7 Deep

Date Received: 07/18/16 13:20

PWSID: 3060912

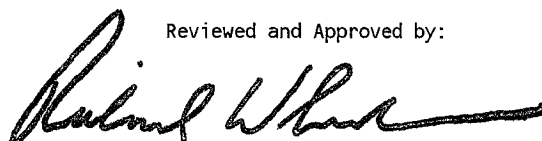
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	13:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:20	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/19	15:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.61	mg/L	.05	1	D6919-03	07/19	15:09	JCL
Nitrogen, Nitrate	2.06	mg/L	.1	2	EPA 353.2	07/19	16:45	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:25	JCL
Nitrogen, Total Kjeldahl	1.21	mg/L	.25	1	EPA 351.2	07/20	17:46	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	1.9	mg/L	1	1	SM5310 C	07/19	14:55	ALD
RESIDUES								
Solids, Total Dissolved	267	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	175	mg/L	1	1	SM 2320 B	07/19	12:10	AEH

COMMENTS

01 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018921

Date Collected: 07/18/16 09:40
Collected By: Client

Sample Desc: BM-7 Deep

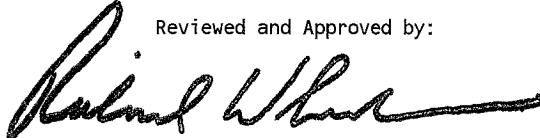
Date Received: 07/18/16 13:20

PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018922

Date Collected: 07/18/16 10:50
 Collected By: Client

Sample Desc: BM-8 Surface

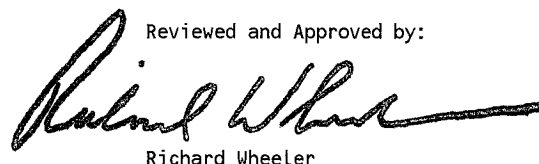
Date Received: 07/18/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/19	15:23	JCL
Nitrogen, Nitrate	2.67	mg/l	.1	2	EPA 353.2	07/19	16:46	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/19	14:28	JCL
Nitrogen, Total Kjeldahl	0.95	mg/l	.25	1	EPA 351.2	07/20	17:47	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/l	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.9	mg/l	1	1	SM5310 C	07/19	15:20	ALD
RESIDUES								
Solids, Total Dissolved	196	mg/l	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	5	mg/l	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	86	mg/l	1	1	SM 2320 B	07/19	12:10	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018922

Date Collected: 07/18/16 10:50
 Collected By: Client

Sample Desc: BM-8 Surface

Date Received: 07/18/16 13:20

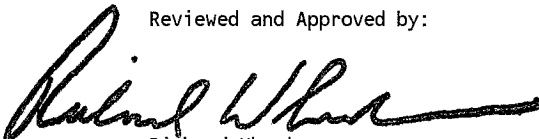
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 03 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018923

Date Collected: 07/18/16 10:50
 Collected By: Client

Sample Desc: BM-8 Mid-Depth

Date Received: 07/18/16 13:20

PWSID: 3060912

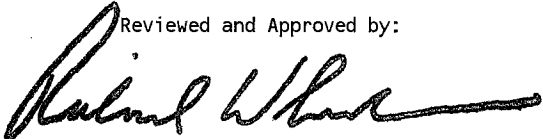
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	0.17	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.17	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.32	mg/L	.05	1	D6919-03	07/19	15:38	JCL
Nitrogen, Nitrate	2.59	mg/L	.1	2	EPA 353.2	07/19	16:49	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:29	JCL
Nitrogen, Total Kjeldahl	0.96	mg/L	.25	1	EPA 351.2	07/20	17:48	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.2	mg/L	1	1	SM5310 C	07/19	15:58	ALD
RESIDUES								
Solids, Total Dissolved	236	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	108	mg/L	1	1	SM 2320 B	07/19	12:10	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018924

Date Collected: 07/18/16 10:50
 Collected By: Client

Sample Desc: BM-8 Deep

Date Received: 07/18/16 13:20

PWSID: 3060912

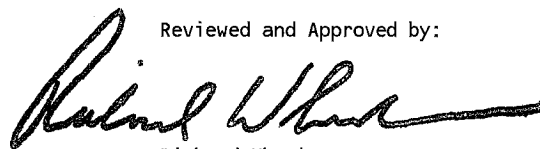
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.07	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.73	mg/L	.05	1	D6919-03	07/19	15:52	JCL
Nitrogen, Nitrate	2.15	mg/L	.1	2	EPA 353.2	07/19	16:50	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:30	JCL
Nitrogen, Total Kjeldahl	1.47	mg/L	.25	1	EPA 351.2	07/20	17:49	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.2	mg/L	1	1	SM5310 C	07/19	16:11	ALD
RESIDUES								
Solids, Total Dissolved	268	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	47	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	161	mg/L	1	1	SM 2320 B	07/19	12:10	AEH

COMMENTS

01 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018924

Date Collected: 07/18/16 10:50
Collected By: Client

Sample Desc: BM-8 Deep

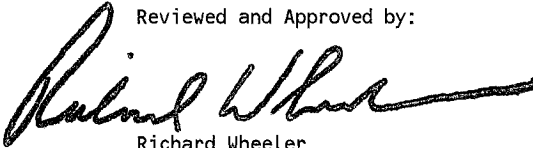
Date Received: 07/18/16 13:20

PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018925

Date Collected: 07/18/16 10:00
 Collected By: Client

Sample Desc: BM-9 Surface

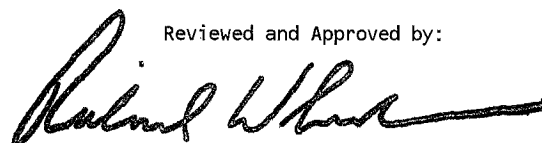
Date Received: 07/18/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	16:07	JCL
Nitrogen, Nitrate	2.75	mg/L	.1	2	EPA 353.2	07/19	16:51	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:31	JCL
Nitrogen, Total Kjeldahl	0.93	mg/L	.25	1	EPA 351.2	07/20	17:50	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	3.7	mg/L	1	1	SM5310 C	07/19	16:23	ALD
RESIDUES								
Solids, Total Dissolved	203	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	88	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018925

Date Collected: 07/18/16 10:00
Collected By: Client

Sample Desc: BM-9 Surface

Date Received: 07/18/16 13:20

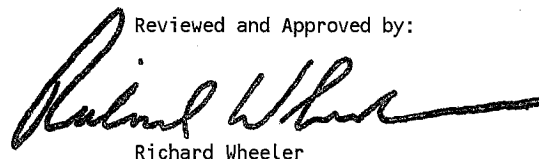
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 03 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018926

Date Collected: 07/18/16 10:00
 Collected By: Client

Sample Desc: BM-9 Mid-Depth

Date Received: 07/18/16 13:20

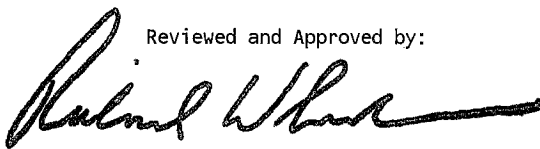
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.20	mg/L	.05	1	D6919-03	07/19	16:22	JCL
Nitrogen, Nitrate	2.98	mg/L	.1	2	EPA 353.2	07/19	16:52	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:32	JCL
Nitrogen, Total Kjeldahl	0.76	mg/L	.25	1	EPA 351.2	07/20	17:51	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	07/19	16:36	ALD
RESIDUES								
Solids, Total Dissolved	237	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	124	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018927

Date Collected: 07/18/16 10:00
 Collected By: Client

Sample Desc: BM-9 Deep

Date Received: 07/18/16 13:20

PWSID: 3060912

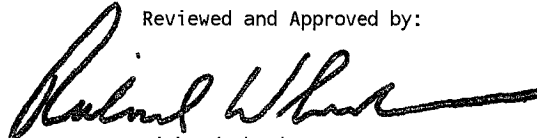
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	0.09	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.17	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	1.28	mg/L	.05	1	D6919-03	07/19	16:36	JCL
Nitrogen, Nitrate	0.49	mg/L	.05	1	EPA 353.2	07/19	17:07	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:35	JCL
Nitrogen, Total Kjeldahl	1.95	mg/L	.25	1	EPA 351.2	07/27	17:43	JCL
OTHER								
Biochemical Oxygen Demand	7	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	07/19	19:47	ALD
RESIDUES								
Solids, Total Dissolved	277	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	16	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	187	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018928

Date Collected: 07/18/16 10:30
 Collected By: Client

Sample Desc: BM-10 Surface

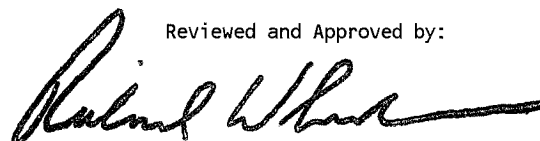
Date Received: 07/18/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	16:51	JCL
Nitrogen, Nitrate	2.43	mg/L	.1	2	EPA 353.2	07/19	16:55	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:36	JCL
Nitrogen, Total Kjeldahl	1.14	mg/L	.25	1	EPA 351.2	07/27	17:46	JCL
OTHER								
Biochemical Oxygen Demand	5	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	4.0	mg/L	1	1	SM5310 C	07/19	20:23	ALD
RESIDUES								
Solids, Total Dissolved	191	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	9	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	87	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018928

Date Collected: 07/18/16 10:30
Collected By: Client

Sample Desc: BM-10 Surface

Date Received: 07/18/16 13:20

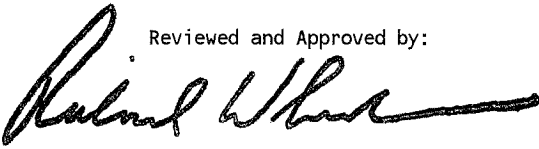
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018929
 Date Collected: 07/18/16 10:30
 Collected By: Client
 Date Received: 07/18/16 13:20

Sample Desc: BM-10 Mid-Depth

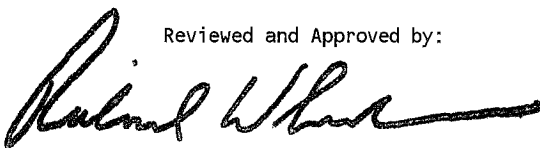
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/19	15:25	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.13	mg/L	.05	1	D6919-03	07/19	17:05	JCL
Nitrogen, Nitrate	2.64	mg/L	.1	2	EPA 353.2	07/19	16:56	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:37	JCL
Nitrogen, Total Kjeldahl	1.17	mg/L	.25	1	EPA 351.2	07/27	17:47	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.7	mg/L	1	1	SM5310 C	07/19	21:04	ALD
RESIDUES								
Solids, Total Dissolved	215	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	98	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

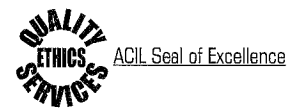
Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018930
 Date Collected: 07/18/16 10:30
 Collected By: Client
 Date Received: 07/18/16 13:20

Sample Desc: BM-10 Deep

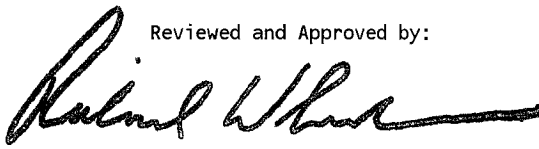
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	0.08	mg/L	.05	1	SM 4500P-E	07/19	15:30	AEH
Phosphorus as P, Total	0.10	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.80	mg/L	.05	1	D6919-03	07/19	18:04	JCL
Nitrogen, Nitrate	3.18	mg/L	.1	2	EPA 353.2	07/19	16:57	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:38	JCL
Nitrogen, Total Kjeldahl	1.71	mg/L	.25	1	EPA 351.2	07/27	15:48	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	07/19	21:16	ALD
RESIDUES								
Solids, Total Dissolved	303	mg/L	5	1	SM 2540C	07/20	13:25	TMH
Solids, Total Suspended	111	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	179	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

COMMENTS

01 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018930
Date Collected: 07/18/16 10:30
Collected By: Client
Date Received: 07/18/16 13:20

Sample Desc: BM-10 Deep

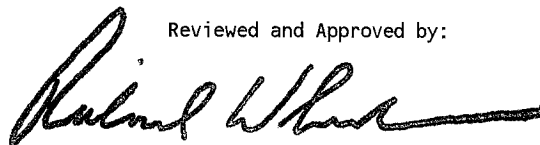
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/03/16
 Lab ID: 3156-16-0018931
 Date Collected: 07/18/16 12:05
 Collected By: Client
 Date Received: 07/18/16 13:20

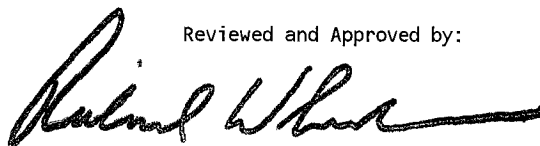
Sample Desc: BM-11 Surface

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	130	/100ml	2	1	SM 9222D	07/18	14:30	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/19	11:00	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.05	mg/L	.01	1	SM 4500P-E	07/19	14:00	AEH
Phosphorus as P, Dissolved	0.11	mg/L	.05	1	SM 4500P-E	07/19	15:30	AEH
Phosphorus as P, Total	0.12	mg/L	.01	1	SM 4500P-E	07/19	15:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/19	18:18	JCL
Nitrogen, Nitrate	4.09	mg/L	.1	2	EPA 353.2	07/19	17:00	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/19	14:40	JCL
Nitrogen, Total Kjeldahl	0.35	mg/L	.25	1	EPA 351.2	07/27	17:49	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/18	17:00	EMW
Total Organic Carbon	2.1	mg/L	1	1	SM5310 C	07/19	21:28	ALD
RESIDUES								
Solids, Total Dissolved	269	mg/L	5	1	SM 2540C	07/20	13:50	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	07/20	13:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	163	mg/L	1	1	SM 2320 B	07/19	13:40	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/03/16
Lab ID: 3156-16-0018931
Date Collected: 07/18/16 12:05
Collected By: Client
Date Received: 07/18/16 13:20

Sample Desc: BM-11 Surface

PWSID: 3060912

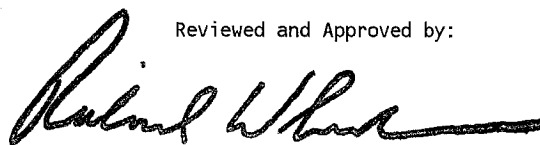
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 16:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



M. J. REIDER ASSOCIATES, INC.

1:21:44 PM
05/17/16

Chain of Custody

No: 275410

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: WACIK

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 23 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RFS

18911
Sample No: 1 Desc: EM-1 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
fc, tc, RES
ALL

18912
Sample No: 2 Desc: EM-2 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
fc, tc, RES
ALL

18913
Sample No: 3 Desc: EM-2 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
fc, tc, RES
ALL

Matrix: o Date: 7/18/16
Time: 1240
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 7/18/16
Time: 0915
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 7/18/16
Time: 0915
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Cool to 6 C;

Relinquished by: [Signature]
Date: 7/18/16 Time: 1315

Received by: [Signature] Received for laboratory by: [Signature]
Date: 7/18/16 Time: 1320

Sample entered by: 94M

M. J. REIDER ASSOCIATES, INC.

rxw
05/17/16 1:21:44 PM

Chain of Custody

No: 275410

Project Leader: rxw
Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 23 Deg F. If Temp Unacceptable, On Ice? Y N
Approved By: RCS

Remarks:

18914 Sample No: 4 Desc: BM-2 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
ALK
no2-n, no3-n, d-po4-p, o-po4, bod,
SW

18915 Sample No: 5 Desc: BM-5 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
ALK
no2-n, no3-n, d-po4-p, o-po4, bod,
SW
fc, RCS

18916 Sample No: 6 Desc: BM-6 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
ALK
no2-n, no3-n, d-po4-p, o-po4, bod,
SW
fc, tc,
RCS

Matrix: 0 Date: 7/18/16
Time: 0915
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 7/18/16
Time: 1205
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: 0 Date: 7/18/16
Time: 0840
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature]
Date: 7/18/16 Time: 1315

Received by: [Signature] Received for laboratory by: [Signature]
Date: 7/18/16 Time: 1320

Sample entered by: 09A

M. J. REIDER ASSOCIATES, INC.

18917
05/17/16 1:21:44 PM

Chain of Custody

No: 275410

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223

Account: 3156
Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 23 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RES

Remarks:

Sample No: 7 Desc: BM-6 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW

Sample No: 8 Desc: BM-6 Deep
nh3-n, tkn, Alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod SW

Sample No: 9 Desc: BM-7 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod, SW
fc, tc,

Matrix: o Date: 7/18/16
Time: 0840
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 7/18/16
Time: 0840
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 7/18/16
Time: 0940
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature]
Date: 7/18/16 Time: 1315

Received by: [Signature]
Date: 7/18/16 Time: 1320

Sample entered by: 99M

M. J. REIDER ASSOCIATES, INC.

TXW
05/17/16 1:21:44 PM

Chain of Custody

No: 275410

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 23 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RES

Remarks:

18920 Sample No: 10 Desc: BM-7 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
RES

18921 Sample No: 11 Desc: BM-7 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
RES

18922 Sample No: 12 Desc: BM-8 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
fc, tc,
RES

Matrix: o Date: 7/18/16
Time: 0940
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 7/18/16
Time: 0940
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 7/18/16
Time: 1050
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature]
Date: 7/18/16 Time: 1315

Received by: [Signature]

Received for laboratory by: [Signature]
Date: 7/18/16 Time: 1320

Sample entered by: OW

Chain of Custody

Account: 3156

Work Order: 006223

Project Leader: rxw

No: 275410

Customer: David Wertz

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: WACIK

Samplers: WACIK

Laboratory Receipt Temp: 23 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: RES

Total Sampling Time (hours): _____ Bottle Prep by: _____

18923 Sample No: 13 Desc: BM-8 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bodw
AM

Date: 7/18/16
Time: 1050

Matrix: o

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

18924 Sample No: 14 Desc: BM-8 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bodw
AM

Date: 7/18/16
Time: 1050

Matrix: o

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

18925 Sample No: 15 Desc: BM-9 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bodw
AM
RES, etc,

Date: 7/18/16
Time: 1000

Matrix: o

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature]

Received for Laboratory by: [Signature]

Date: 7/18/16 Time: 1315

Date: 7/18/16 Time: 1320

Sample entered by: [Signature]

M. J. REIDER ASSOCIATES, INC.

18926 05/17/16 1:21:45 PM

Chain of Custody

No: 275410

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Account: 3156
Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 23 Deg C. If Temp Unacceptable, On Ice? Y
Approved By: RES

Remarks:

18926 Sample No: 16 Desc: BM-9 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bodw
M AH

18927 Sample No: 17 Desc: BM-9 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bodw
M AH

18928 Sample No: 18 Desc: BM-10 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bodw
fc, tc,
M AH RES

Matrix: o Date: 7/18/10
Time: 1000
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 7/18/10
Time: 1000
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 7/18/10
Time: 1030
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterilize/Na2S2O3;

Relinquished by: [Signature]
Date: 7/18/10 Time: 1315

Received by: [Signature]
Date: 7/18/10 Time: 1320

Received for Laboratory by: [Signature]
Date: 7/18/10 Time: 1320

Sample entered by: 97A

Chain of Custody
Project Leader: IKW No: 275410

Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 23 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RFS

18929 Sample No: 19 Desc: BM-10 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
Matrix: o Date: 7/18/10
Time: 1030
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

18930 Sample No: 20 Desc: BM-10 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
Matrix: o Date: 7/18/10
Time: 1030
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

18931 Sample No: 21 Desc: BM-11 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
fc, RFS
Matrix: o Date: 7/18/10
Time: 1205
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 7/18/10 Time: 1315
Date: 7/18/10 Time: 320

Sample entered by: RN

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023457

Date Collected: 08/16/16 12:00
 Collected By: Client

Sample Desc: BM-1 Surface

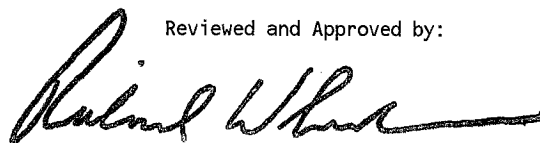
Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	6	/100ml	2	1	SM 9222D	08/16	14:30	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	08/19	13:45	AEH
Phosphorus as P, Total	0.07	mg/L	.01	1	SM 4500P-E	08/19	14:30	AEH
NITROGENS								
Nitrogen, Ammonia	1.67	mg/L	.05	1	D6919-03	08/16	15:34	JCL
Nitrogen, Nitrate	0.11	mg/L	.05	1	EPA 353.2	08/17	15:57	JCL
Nitrogen, Nitrite	0.11	mg/L	.05	1	EPA 353.2	08/17	14:22	JCL
Nitrogen, Total Kjeldahl	2.61	mg/L	.25	1	EPA 351.2	08/19	15:02	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	08/18	10:38	HRG
RESIDUES								
Solids, Total Dissolved	273	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	184	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0023457

Date Collected: 08/16/16 12:00
Collected By: Client

Sample Desc: BM-1 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

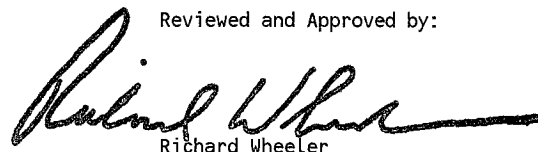
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

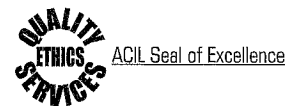

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023458

Date Collected: 08/16/16 10:30
 Collected By: Client

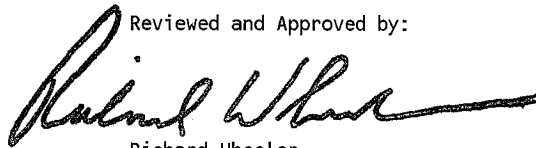
Sample Desc: BM-2 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	08/16	14:30	TNS
Total Coliform	190	mpn/100mL	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:45	AEH
Phosphorus as P, Total	0.09	mg/L	.01	1	SM 4500P-E	08/19	14:30	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	15:49	JCL
Nitrogen, Nitrate	1.48	mg/L	.05	1	EPA 353.2	08/17	15:58	JCL
Nitrogen, Nitrite	0.08	mg/L	.05	1	EPA 353.2	08/17	14:25	JCL
Nitrogen, Total Kjeldahl	0.80	mg/L	.25	1	EPA 351.2	08/19	15:04	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	3.4	mg/L	1	1	SM5310 C	08/18	11:15	HRG
RESIDUES								
Solids, Total Dissolved	148	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	84	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023458

Date Collected: 08/16/16 10:30
 Collected By: Client

Sample Desc: BM-2 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

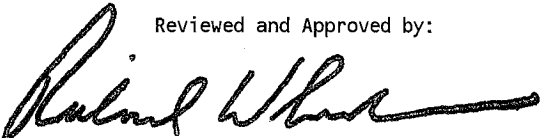
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.

- 02 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023459

Date Collected: 08/16/16 10:30
 Collected By: Client

Sample Desc: BM-2 Mid-Depth

Date Received: 08/16/16 13:52

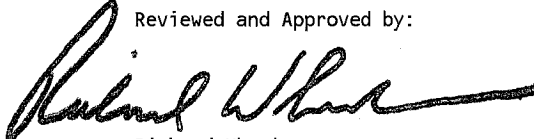
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:50	AEH
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/19	14:35	AEH
NITROGENS								
Nitrogen, Ammonia	0.53	mg/l	.05	1	D6919-03	08/16	16:03	JCL
Nitrogen, Nitrate	1.35	mg/l	.05	1	EPA 353.2	08/17	16:01	JCL
Nitrogen, Nitrite	0.05	mg/l	.05	1	EPA 353.2	08/17	14:26	JCL
Nitrogen, Total Kjeldahl	1.16	mg/l	.25	1	EPA 351.2	08/19	15:05	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.5	mg/l	1	1	SM5310 C	08/18	11:27	HRG
RESIDUES								
Solids, Total Dissolved	210	mg/l	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	141	mg/l	1	1	SM 2320 B	08/26	11:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023460

Date Collected: 08/16/16 10:30
 Collected By: Client

Sample Desc: BM-2 Deep

Date Received: 08/16/16 13:52

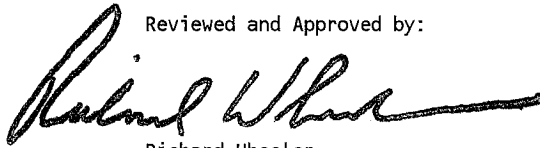
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:50	AEH
Phosphorus as P, Total	0.10	mg/l	.01	1	SM 4500P-E	08/19	14:35	AEH
NITROGENS								
Nitrogen, Ammonia	1.13	mg/l	.05	1	D6919-03	08/16	16:18	JCL
Nitrogen, Nitrate	0.33	mg/l	.05	1	EPA 353.2	08/17	16:02	JCL
Nitrogen, Nitrite	0.08	mg/l	.05	1	EPA 353.2	08/17	14:27	JCL
Nitrogen, Total Kjeldahl	1.85	mg/l	.25	1	EPA 351.2	08/19	15:06	JCL
OTHER								
Biochemical Oxygen Demand	5	mg/l	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.2	mg/l	1	1	SM5310 C	08/18	11:51	HRG
RESIDUES								
Solids, Total Dissolved	231	mg/l	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	5	mg/l	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	173	mg/l	1	1	SM 2320 B	08/26	11:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023461

Date Collected: 08/16/16 11:30
 Collected By: Client

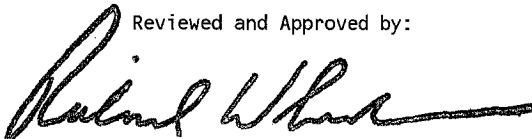
Sample Desc: BM-5 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	110	/100ml	2	1	SM 9222D	08/16	14:30	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	0.07	mg/L	.05	1	SM 4500P-E	08/19	13:50	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	08/19	14:35	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	16:32	JCL
Nitrogen, Nitrate	1.96	mg/L	.05	1	EPA 353.2	08/17	16:03	JCL
Nitrogen, Nitrite	0.05	mg/L	.05	1	EPA 353.2	08/17	14:28	JCL
Nitrogen, Total Kjeldahl	2.65	mg/L	.25	1	EPA 351.2	08/19	15:07	JCL
OTHER								
Biochemical Oxygen Demand	20	mg/L	2	1	SM 5210B	08/22	13:00	ALD
Total Organic Carbon	5.6	mg/L	1	1	SM5310 C	08/18	12:05	HRG
RESIDUES								
Solids, Total Dissolved	192	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	26	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	101	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0023461

Date Collected: 08/16/16 11:30
Collected By: Client

Sample Desc: BM-5 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

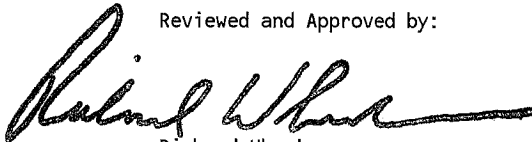
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.
- 03 The TOC duplicate peaks %RSD was greater than 10%. The sample was reanalyzed and the %RSD remained greater than 10%.
- 04 BOD was reanalyzed after the recommended holding time had elapsed. Original dilutions were not appropriate for this sample. Values should be considered an estimate.
- 05 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023462

Date Collected: 08/16/16 08:15
 Collected By: Client

Sample Desc: BM-6 Surface

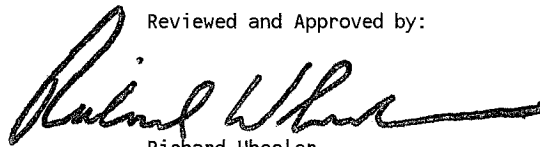
Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	08/16	14:30	TNS
Total Coliform	730	mpn/100mL	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:50	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:35	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	16:47	JCL
Nitrogen, Nitrate	1.56	mg/L	.05	1	EPA 353.2	08/17	16:04	JCL
Nitrogen, Nitrite	0.08	mg/L	.05	1	EPA 353.2	08/17	14:29	JCL
Nitrogen, Total Kjeldahl	0.66	mg/L	.25	1	EPA 351.2	08/19	15:08	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	08/18	12:18	HRG
RESIDUES								
Solids, Total Dissolved	158	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	84	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0023462

Date Collected: 08/16/16 08:15
Collected By: Client

Sample Desc: BM-6 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

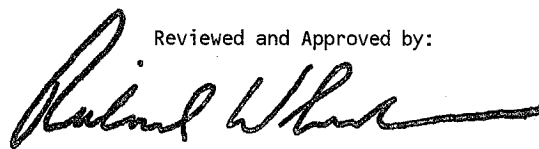
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

- 02 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023463

Date Collected: 08/16/16 08:15
 Collected By: Client

Sample Desc: BM-6 Mid-Depth

Date Received: 08/16/16 13:52

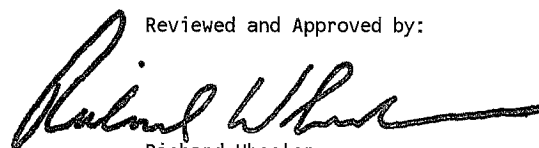
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:50	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:35	AEH
NITROGENS								
Nitrogen, Ammonia	0.36	mg/L	.05	1	D6919-03	08/16	17:31	JCL
Nitrogen, Nitrate	1.49	mg/L	.05	1	EPA 353.2	08/17	16:05	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/17	14:30	JCL
Nitrogen, Total Kjeldahl	0.90	mg/L	.25	1	EPA 351.2	08/19	15:09	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	08/18	12:30	HRG
RESIDUES								
Solids, Total Dissolved	215	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	143	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023464

Date Collected: 08/16/16 08:15
 Collected By: Client

Sample Desc: BM-6 Deep

Date Received: 08/16/16 13:52

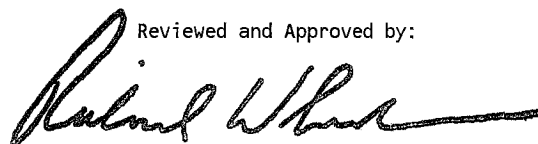
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:50	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:35	AEH
NITROGENS								
Nitrogen, Ammonia	0.66	mg/L	.05	1	D6919-03	08/16	17:45	JCL
Nitrogen, Nitrate	0.65	mg/L	.05	1	EPA 353.2	08/17	16:06	JCL
Nitrogen, Nitrite	0.14	mg/L	.05	1	EPA 353.2	08/17	14:31	JCL
Nitrogen, Total Kjeldahl	1.37	mg/L	.25	1	EPA 351.2	08/19	15:10	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.0	mg/L	1	1	SM5310 C	08/18	12:42	HRG
RESIDUES								
Solids, Total Dissolved	228	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	162	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023465

Date Collected: 08/16/16 10:10
 Collected By: Client

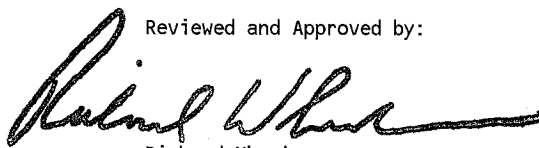
Sample Desc: BM-7 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	08/16	14:30	TNS
Total Coliform	1600	mpn/100ml	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	18:00	JCL
Nitrogen, Nitrate	1.48	mg/L	.05	1	EPA 353.2	08/17	16:09	JCL
Nitrogen, Nitrite	0.08	mg/L	.05	1	EPA 353.2	08/17	14:34	JCL
Nitrogen, Total Kjeldahl	0.91	mg/L	.25	1	EPA 351.2	08/19	15:13	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	08/18	12:54	HRG
RESIDUES								
Solids, Total Dissolved	162	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	86	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023465

Date Collected: 08/16/16 10:10
 Collected By: Client

Sample Desc: BM-7 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

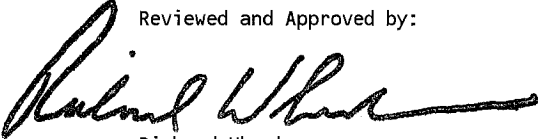
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

- 02 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023466

Date Collected: 08/16/16 10:10
 Collected By: Client

Sample Desc: BM-7 Mid-Depth

Date Received: 08/16/16 13:52

PWSID: 3060912

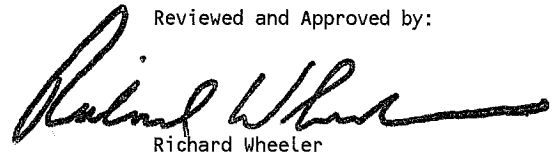
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	18:15	JCL
Nitrogen, Nitrate	2.16	mg/L	.05	1	EPA 353.2	08/17	16:10	JCL
Nitrogen, Nitrite	0.46	mg/L	.05	1	EPA 353.2	08/17	14:35	JCL
Nitrogen, Total Kjeldahl	0.70	mg/L	.25	1	EPA 351.2	08/19	15:14	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	08/18	13:06	HRG
RESIDUES								
Solids, Total Dissolved	165	mg/L	5	1	SM 2540C	08/22	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	109	mg/L	1	1	SM 2320 B	08/26	11:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023467

Date Collected: 08/16/16 10:10
 Collected By: Client

Sample Desc: BM-7 Deep

Date Received: 08/16/16 13:52

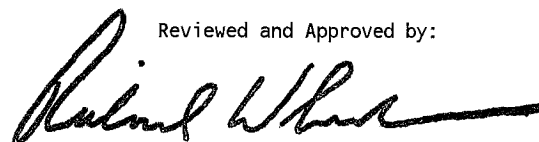
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	0.09	mg/L	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	1.35	mg/L	.05	1	D6919-03	08/16	18:29	3
Nitrogen, Nitrate	0.82	mg/L	.05	1	EPA 353.2	08/17	16:11	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/17	14:36	JCL
Nitrogen, Total Kjeldahl	2.49	mg/L	.25	1	EPA 351.2	08/19	15:15	JCL
OTHER								
Biochemical Oxygen Demand	5	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	08/18	13:56	HRG
RESIDUES								
Solids, Total Dissolved	212	mg/L	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	15	mg/L	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	138	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023468

Date Collected: 08/16/16 09:50
 Collected By: Client

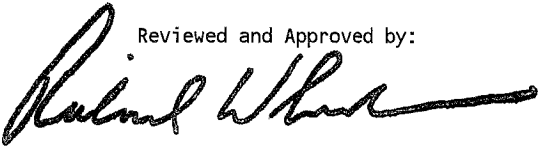
Sample Desc: BM-8 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	08/16	15:00	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	18:44	JCL
Nitrogen, Nitrate	1.31	mg/L	.05	1	EPA 353.2	08/17	16:12	JCL
Nitrogen, Nitrite	0.07	mg/L	.05	1	EPA 353.2	08/17	14:38	JCL
Nitrogen, Total Kjeldahl	1.08	mg/L	.25	1	EPA 351.2	08/19	15:16	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	08/18	14:49	HRG
RESIDUES								
Solids, Total Dissolved	162	mg/L	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	76	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0023468

Date Collected: 08/16/16 09:50
Collected By: Client

Sample Desc: BM-8 Surface

Date Received: 08/16/16 13:52

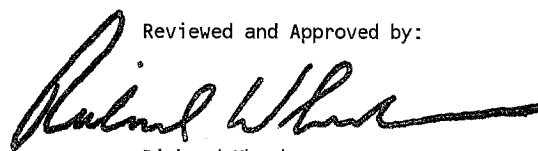
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023469

Date Collected: 08/16/16 09:50
 Collected By: Client

Sample Desc: BM-8 Mid-Depth

Date Received: 08/16/16 13:52

PWSID: 3060912

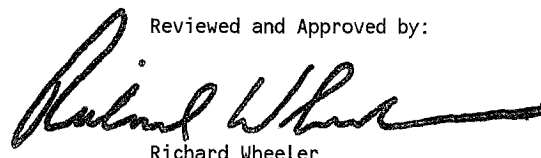
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	18:58	JCL
Nitrogen, Nitrate	1.32	mg/L	.05	1	EPA 353.2	08/17	16:14	JCL
Nitrogen, Nitrite	0.07	mg/L	.05	1	EPA 353.2	08/17	14:39	JCL
Nitrogen, Total Kjeldahl	1.02	mg/L	.25	1	EPA 351.2	08/19	15:17	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.4	mg/L	1	1	SM5310 C	08/18	15:14	HRG
RESIDUES								
Solids, Total Dissolved	158	mg/L	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	68	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023470

Date Collected: 08/16/16 09:50
 Collected By: Client

Sample Desc: BM-8 Deep

Date Received: 08/16/16 13:52

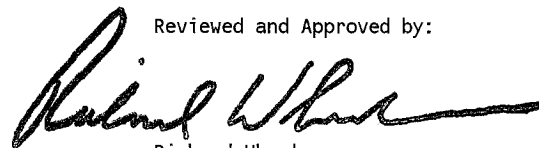
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.09	mg/l	.05	1	D6919-03	08/16	19:13	JCL
Nitrogen, Nitrate	1.62	mg/l	.05	1	EPA 353.2	08/17	16:15	JCL
Nitrogen, Nitrite	0.50	mg/l	.05	1	EPA 353.2	08/17	14:40	JCL
Nitrogen, Total Kjeldahl	0.84	mg/l	.25	1	EPA 351.2	08/19	15:18	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.2	mg/l	1	1	SM5310 C	08/18	15:26	HRG
RESIDUES								
Solids, Total Dissolved	202	mg/l	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	101	mg/l	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023471

Date Collected: 08/16/16 09:35
 Collected By: Client

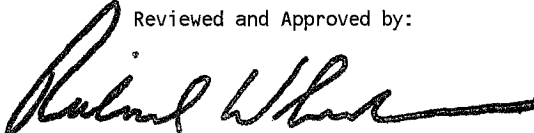
Sample Desc: BM-9 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	08/16	15:00	TNS
Total Coliform	1700	mpn/100ml	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/16	19:28	JCL
Nitrogen, Nitrate	1.42	mg/l	.05	1	EPA 353.2	08/17	16:16	JCL
Nitrogen, Nitrite	0.08	mg/l	.05	1	EPA 353.2	08/17	14:41	JCL
Nitrogen, Total Kjeldahl	0.82	mg/l	.25	1	EPA 351.2	08/19	15:19	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/l	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.7	mg/l	1	1	SM5310 C	08/18	15:38	HRG
RESIDUES								
Solids, Total Dissolved	176	mg/l	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	4	mg/l	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	86	mg/l	1	1	SM 2320 B	08/26	12:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023471
 Date Collected: 08/16/16 09:35
 Collected By: Client
 Date Received: 08/16/16 13:52

Sample Desc: BM-9 Surface

PWSID: 3060912

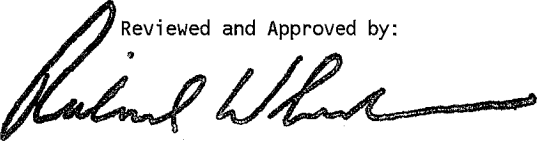
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.

- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023472

Date Collected: 08/16/16 09:35
 Collected By: Client

Sample Desc: BM-9 Mid-Depth

Date Received: 08/16/16 13:52

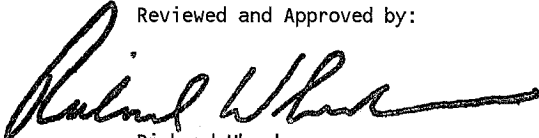
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:55	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	19:42	JCL
Nitrogen, Nitrate	1.74	mg/L	.05	1	EPA 353.2	08/17	16:17	JCL
Nitrogen, Nitrite	0.22	mg/L	.05	1	EPA 353.2	08/17	14:42	JCL
Nitrogen, Total Kjeldahl	0.91	mg/L	.25	1	EPA 351.2	08/19	15:20	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	08/18	15:50	HRG
RESIDUES								
Solids, Total Dissolved	188	mg/L	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	90	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023473

Date Collected: 08/16/16 09:35
 Collected By: Client

Sample Desc: BM-9 Deep

Date Received: 08/16/16 13:52

PWSID: 3060912

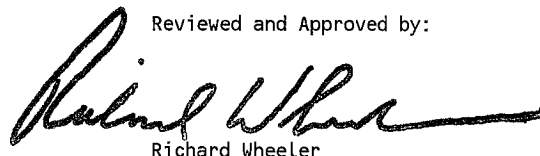
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/l	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	14:00	AEH
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/19	14:40	AEH
NITROGENS								
Nitrogen, Ammonia	1.02	mg/l	.05	1	D6919-03	08/16	20:41	JCL
Nitrogen, Nitrate	1.41	mg/l	.05	1	EPA 353.2	08/17	16:20	JCL
Nitrogen, Nitrite	0.06	mg/l	.05	1	EPA 353.2	08/17	14:45	JCL
Nitrogen, Total Kjeldahl	1.97	mg/l	.25	1	EPA 351.2	08/19	15:21	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/l	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.6	mg/l	1	1	SM5310 C	08/18	16:02	HRG
RESIDUES								
Solids, Total Dissolved	238	mg/l	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	17	mg/l	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	127	mg/l	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023474

Date Collected: 08/16/16 09:15
 Collected By: Client

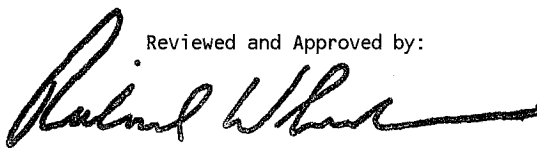
Sample Desc: BM-10 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	08/16	15:00	TNS
Total Coliform	340	mpn/100ml	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:00	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	20:55	JCL
Nitrogen, Nitrate	1.00	mg/L	.05	1	EPA 353.2	08/17	16:21	JCL
Nitrogen, Nitrite	0.06	mg/L	.05	1	EPA 353.2	08/17	14:46	JCL
Nitrogen, Total Kjeldahl	1.44	mg/L	.25	1	EPA 351.2	08/19	15:22	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	08/18	16:15	HRG
RESIDUES								
Solids, Total Dissolved	165	mg/L	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	70	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0023474

Date Collected: 08/16/16 09:15
Collected By: Client

Sample Desc: BM-10 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

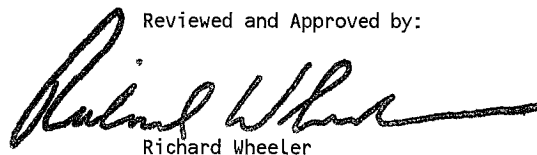
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023475

Date Collected: 08/16/16 09:15
 Collected By: Client

Sample Desc: BM-10 Mid-Depth

Date Received: 08/16/16 13:52

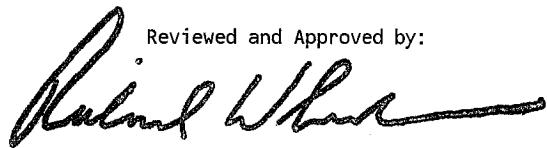
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	14:00	AEH
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/19	14:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/16	21:10	JCL
Nitrogen, Nitrate	1.06	mg/l	.05	1	EPA 353.2	08/17	16:22	JCL
Nitrogen, Nitrite	0.06	mg/l	.05	1	EPA 353.2	08/17	14:47	JCL
Nitrogen, Total Kjeldahl	1.47	mg/l	.25	1	EPA 351.2	08/19	15:24	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/l	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	3.0	mg/l	1	1	SM5310 C	08/18	16:27	HRG
RESIDUES								
Solids, Total Dissolved	145	mg/l	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	4	mg/l	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	66	mg/l	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023476

Date Collected: 08/16/16 09:15
 Collected By: Client

Sample Desc: BM-10 Deep

Date Received: 08/16/16 13:52

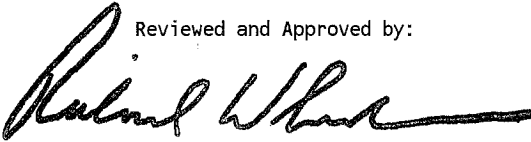
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:00	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	08/19	14:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.26	mg/L	.05	1	D6919-03	08/16	21:25	JCL
Nitrogen, Nitrate	3.37	mg/L	.05	1	EPA 353.2	08/17	16:23	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/17	14:48	JCL
Nitrogen, Total Kjeldahl	1.35	mg/L	.25	1	EPA 351.2	08/19	15:25	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/16	15:10	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	08/18	16:39	HRG
RESIDUES								
Solids, Total Dissolved	244	mg/L	5	1	SM 2540C	08/22	13:45	TMH
Solids, Total Suspended	64	mg/L	3	1	SM 2540D	08/22	13:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	140	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0023477

Date Collected: 08/16/16 11:30
 Collected By: Client

Sample Desc: BM-11 Surface

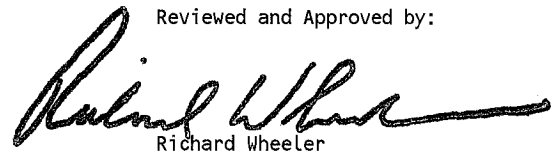
Date Received: 08/16/16 13:52

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	200	/100mL	2	1	SM 9222D	08/16	15:00	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	08/17	10:05	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	08/16	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:00	AEH
Phosphorus as P, Total	0.11	mg/L	.01	1	SM 4500P-E	08/19	14:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/16	21:39	JCL
Nitrogen, Nitrate	2.25	mg/L	.05	1	EPA 353.2	08/17	16:26	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/17	14:50	JCL
Nitrogen, Total Kjeldahl	3.21	mg/L	.25	1	EPA 351.2	08/19	15:30	JCL
OTHER								
Biochemical Oxygen Demand	27	mg/L	2	1	SM 5210B	08/22	13:00	ALD
Total Organic Carbon	6.0	mg/L	1	1	SM5310 C	08/18	17:18	HRG
RESIDUES								
Solids, Total Dissolved	202	mg/L	5	1	SM 2540C	08/22	14:10	TMH
Solids, Total Suspended	42	mg/L	3	1	SM 2540D	08/22	14:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	101	mg/L	1	1	SM 2320 B	08/26	12:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0023477

Date Collected: 08/16/16 11:30
Collected By: Client

Sample Desc: BM-11 Surface

Date Received: 08/16/16 13:52

PWSID: 3060912

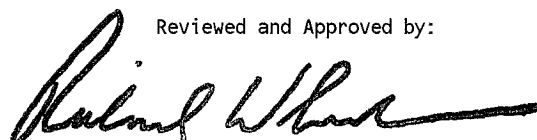
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 08/16/2016 at 15:35.
- 03 BOD was reanalyzed after the recommended holding time had elapsed. Original dilutions were not appropriate for this sample. Values should be considered an estimate.
- 04 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 276887

Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: WACIK

Samplers: WACIK

Remarks: _____

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? (Y) N

Approved By: CW

Sample No: 1 Desc: BM-1 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, body AM

tc, tc, TNS

Date: 8/16/16 Matrix: o Time: 1200

Sample No: 2 Desc: BM-2 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, body AM

tc, tc, TNS

Date: 8/16/16 Matrix: o Time: 1030

Sample No: 3 Desc: BM-2 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, body AM

tc, tc, TNS

Date: 8/16/16 Matrix: o Time: 1030

Relinquished by: [Signature] Received by: [Signature]

Date: 8/16/16 Time: 1230

Date: 8/16/16 Time: 1352

Sample entered by: [Signature]

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 276887
 Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
 Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600 Arlington VA 22201-0000
 Phone: 703-387-5516 Ext: WACIK
 Samplers: WACIK

Remarks: _____
 Total Sampling Time (hours): _____ Bottle Prep by: _____
 Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N
 Approved By: OML

- Sample No: 4 Desc: BM-2 Deep
 nh3-n, tkn, alk, tds, tss, po4-p, toc, ju
 no2-n, no3-n, d-po4-p, o-po4, bod NA B
- Sample No: 5 Desc: BM-5 Surface
 nh3-n, tkn, alk, tds, tss, po4-p, toc, m
 no2-n, no3-n, d-po4-p, o-po4, bod NA B
 fc, tc, TNS
- Sample No: 6 Desc: BM-6 Surface
 nh3-n, tkn, alk, tds, tss, po4-p, toc, m
 no2-n, no3-n, d-po4-p, o-po4, bod NA B
 fc, tc, TNS

- Matrix: o Date: 8/16/16
 Time: 1030
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;
- Matrix: o Date: 8/16/16
 Time: 1130
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;
 F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;
- Matrix: o Date: 8/16/16
 Time: 815
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;
 F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
 Date: 8/16/16 Time: 1230
 Date: 8/16/16 Time: 1352

Sample entered by: [Signature]
 1330

M. J. REIDER ASSOCIATES, INC.

06/24/16 10:05:12 AM

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 276887
 Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
 Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000
 Phone: 703-387-5516 Ext: _____
 Samplers: WACIK Approved By: OMC

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? (Y) N

=====

Sample No: 7 Desc: BM-6 Mid-Depth
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod
WACIK

Matrix: o Date: 8/16/16
 Time: 8:15
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;

Sample No: 8 Desc: BM-6 Deep
 nh3-n, tkn, Alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod
WACIK

Matrix: o Date: 8/16/16
 Time: 8:15
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;

Sample No: 9 Desc: BM-7 Surface
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod
 fc, tc
WACIK

Matrix: o Date: 8/16/16
 Time: 10:00
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;
 F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
 Date: 8/16/16 Time: 1230
1330

Received for Laboratory by: [Signature]
 Date: 8/16/16 Time: 1352

Sample entered by: _____

(N)

M. J. REIDER ASSOCIATES, INC.

rxw
06/24/16 10:05:12 AM

Chain of Custody

No: 276887

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Account: 3156

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: CAC

Remarks:

23466 Sample No: 10 Desc: BM-7 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
nw

no2-n, no3-n, d-po4-p, o-po4, bod,
AW B

23467 Sample No: 11 Desc: BM-7 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
nw

no2-n, no3-n, d-po4-p, o-po4, bod,
AW B

23468 Sample No: 12 Desc: BM-8 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
nw

no2-n, no3-n, d-po4-p, o-po4, bod,
AW B
fc, toc
TRD

Matrix: o Date: 8/16/16
Time: 1010
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 8/16/16
Time: 1010
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 8/16/16
Time: 950
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 8/16/16 Time: 1230
1330

Date: 8/16/16 Time: 1352

Sample entered by: [Signature]

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 276887
 Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
 Address: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000
 Phone: 703-387-5516 Ext: _____
 Samplers: WACIK

Remarks: _____
 Total Sampling Time (hours): _____ Bottle Prep by: _____
 Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N
 Approved By: CML

Sample No:	Desc:	Matrix:	Date:	Time:
23469	13 Desc: BM-8 Mid-Depth nh3-n, tkn, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod <i>AA</i>	o	<u>8/10/16</u>	<u>930</u>
23470	14 Desc: BM-8 Deep nh3-n, tkn, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod <i>AA</i>	o	<u>8/10/16</u>	<u>930</u>
23471	15 Desc: BM-9 Surface nh3-n, tkn, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod fc, tc <i>AA</i>	o	<u>8/10/16</u>	<u>935</u>

Relinquished by: [Signature] Received by: [Signature]
 Date: 8/10/16 Time: 1230
 Date: 8/10/16 Time: 1330
 Received for Laboratory by: [Signature]
 Date: 8/10/16 Time: 1352
 Sample entered by: [Signature]

Chain of Custody

Account: 3156

Work Order: 006223

Project Leader: rxw

No: 276887

Customer: David Wertz

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Total Sampling Time (hours): _____ Bottle Prep by: _____

Phone: 703-387-5516 Ext: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? N

Samplers: WACIK

Approved By: CMC

Sample No: 16 Desc: BM-9 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod ^{AA} _B

Sample No: 17 Desc: BM-9 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod ^{AA} _B

Sample No: 18 Desc: BM-10 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod ^{AA} _B

fc, tc _{TMS}

Matrix: o Date: 8/19/16
Time: 935
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 8/19/16
Time: 935
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 8/19/16
Time: 915
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for Laboratory by: [Signature]

Date: 8/16/16 Time: 1230
1330

Date: 8/16/16 Time: 1352

Sample entered by: [Signature]

M. J. REIDER ASSOCIATES, INC.

06/24/16 10:05:12 AM

Chain of Custody

No: 276887

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223

Account: 3156

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: cm

23475
Sample No: 19 Desc: BM-10 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
A4

23476
Sample No: 20 Desc: BM-10 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
A4

23477
Sample No: 21 Desc: BM-11 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod
fc, tc
A4

Matrix: 0 Date: 8/16/16
Time: 915
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 8/16/16
Time: 915
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 8/16/16
Time: 1130
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no2 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 8/16/16 Time: 1230
1330

Date: 8/16/16 Time: 1352

Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028526

Date Collected: 09/12/16 12:20
 Collected By: Client

Sample Desc: BM-1 Surface

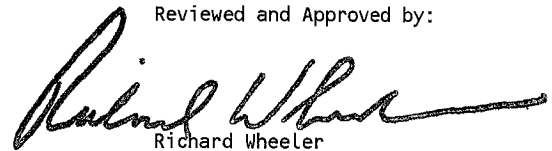
Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Fecal Coliform	10	/100mL	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	580	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:20	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	09/15	16:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.70	mg/L	.05	1	D6919-03	09/13	00:14	JCL
Nitrogen, Nitrate	0.87	mg/L	.05	1	EPA 353.2	09/13	15:50	JCL
Nitrogen, Nitrite	0.08	mg/L	.05	1	EPA 353.2	09/13	14:13	JCL
Nitrogen, Total Kjeldahl	1.54	mg/L	.25	1	EPA 351.2	09/15	17:22	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	09/14	22:07	ALD
RESIDUES								
Solids, Total Dissolved	210	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	123	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028526

Date Collected: 09/12/16 12:20
Collected By: Client

Sample Desc: BM-1 Surface

Date Received: 09/12/16 13:20

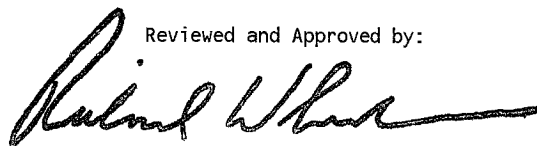
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028527

Date Collected: 09/12/16 09:15
 Collected By: Client

Sample Desc: BM-2 Surface

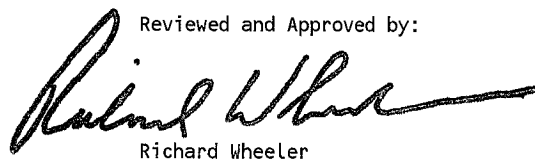
Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	240	mpn/100ml	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:20	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	09/15	16:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	00:28	JCL
Nitrogen, Nitrate	0.97	mg/L	.05	1	EPA 353.2	09/13	15:51	JCL
Nitrogen, Nitrite	0.14	mg/L	.05	1	EPA 353.2	09/13	14:16	JCL
Nitrogen, Total Kjeldahl	0.78	mg/L	.25	1	EPA 351.2	09/15	17:25	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	09/14	22:31	ALD
RESIDUES								
Solids, Total Dissolved	174	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	102	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

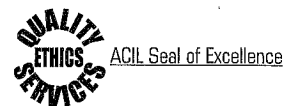

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028527

Date Collected: 09/12/16 09:15
Collected By: Client

Sample Desc: BM-2 Surface

Date Received: 09/12/16 13:20

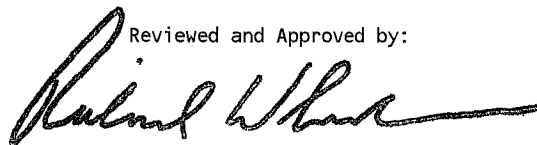
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028528

Date Collected: 09/12/16 09:15
 Collected By: Client

Sample Desc: BM-2 Mid-Depth

Date Received: 09/12/16 13:20

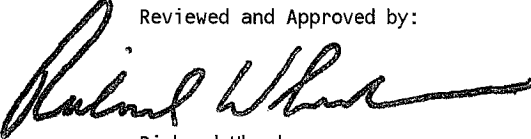
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:20	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	09/15	16:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.29	mg/L	.05	1	D6919-03	09/13	00:43	JCL
Nitrogen, Nitrate	1.12	mg/L	.05	1	EPA 353.2	09/13	15:54	JCL
Nitrogen, Nitrite	0.18	mg/L	.05	1	EPA 353.2	09/13	14:17	JCL
Nitrogen, Total Kjeldahl	1.00	mg/L	.25	1	EPA 351.2	09/15	17:26	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	09/14	22:43	ALD
RESIDUES								
Solids, Total Dissolved	200	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	114	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028529

Date Collected: 09/12/16 09:15
 Collected By: Client

Sample Desc: BM-2 Deep

Date Received: 09/12/16 13:20

PWSID: 3060912

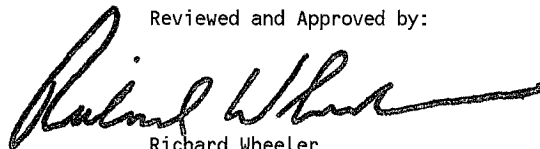
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	0.11	mg/L	.05	1	SM 4500P-E	09/15	16:20	AEH
Phosphorus as P, Total	0.15	mg/L	.01	1	SM 4500P-E	09/15	16:40	AEH
NITROGENS								
Nitrogen, Ammonia	0.93	mg/L	.05	1	D6919-03	09/13	00:58	JCL
Nitrogen, Nitrate	0.98	mg/L	.05	1	EPA 353.2	09/13	15:55	JCL
Nitrogen, Nitrite	0.09	mg/L	.05	1	EPA 353.2	09/13	14:18	JCL
Nitrogen, Total Kjeldahl	1.83	mg/L	.25	1	EPA 351.2	09/15	17:27	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	09/14	22:55	ALD
RESIDUES								
Solids, Total Dissolved	244	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	54	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	139	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028530

Date Collected: 09/12/16 11:50
 Collected By: Client

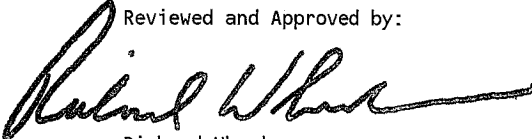
Sample Desc: BM-5 Surface

Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2700	/100mL	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	09/15	16:40	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	01:12	JCL
Nitrogen, Nitrate	3.33	mg/L	.05	1	EPA 353.2	09/13	15:56	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/13	14:19	JCL
Nitrogen, Total Kjeldahl	0.62	mg/L	.25	1	EPA 351.2	09/15	17:28	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	09/14	23:08	ALD
RESIDUES								
Solids, Total Dissolved	251	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	134	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028530

Date Collected: 09/12/16 11:50
Collected By: Client

Sample Desc: BM-5 Surface

Date Received: 09/12/16 13:20

PWSID: 3060912

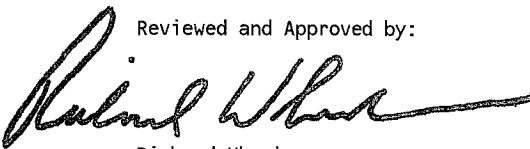
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.

- 02 The total colifrom sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028531

Date Collected: 09/12/16 09:00
 Collected By: Client

Sample Desc: BM-6 Surface

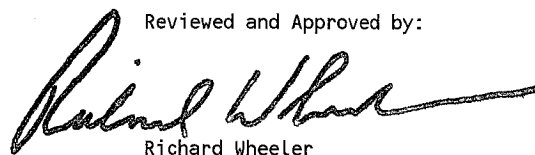
Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	3	/100ml	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/15	16:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	01:27	JCL
Nitrogen, Nitrate	0.94	mg/L	.05	1	EPA 353.2	09/13	15:57	JCL
Nitrogen, Nitrite	0.14	mg/L	.05	1	EPA 353.2	09/13	14:20	JCL
Nitrogen, Total Kjeldahl	0.78	mg/L	.25	1	EPA 351.2	09/15	17:29	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	09/14	23:30	ALD
RESIDUES								
Solids, Total Dissolved	207	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	103	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028531

Date Collected: 09/12/16 09:00
Collected By: Client

Sample Desc: BM-6 Surface

Date Received: 09/12/16 13:20

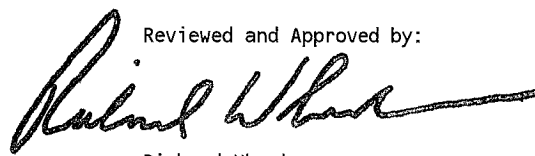
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total colifrom sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028532

Date Collected: 09/12/16 09:00
 Collected By: Client

Sample Desc: BM-6 Mid-Depth

Date Received: 09/12/16 13:20

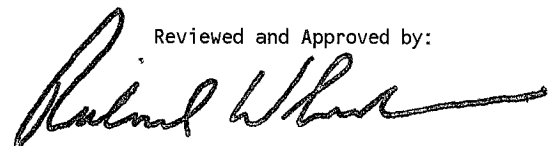
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	09/15	16:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.67	mg/L	.05	1	D6919-03	09/13	01:42	JCL
Nitrogen, Nitrate	0.80	mg/L	.05	1	EPA 353.2	09/13	15:58	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/13	14:21	JCL
Nitrogen, Total Kjeldahl	1.22	mg/L	.25	1	EPA 351.2	09/15	17:29	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	09/14	23:42	ALD
RESIDUES								
Solids, Total Dissolved	238	mg/L	5	1	SM 2540C	09/14	13:35	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	09/14	12:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	129	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028533

Date Collected: 09/12/16 09:00
 Collected By: Client

Sample Desc: BM-6 Deep

Date Received: 09/12/16 13:20

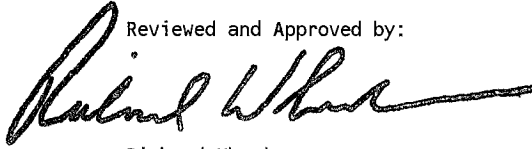
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	09/15	16:45	AEH
NITROGENS								
Nitrogen, Ammonia	1.43	mg/L	.05	1	D6919-03	09/13	01:56	JCL
Nitrogen, Nitrate	0.49	mg/L	.05	1	EPA 353.2	09/13	15:59	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/13	14:22	JCL
Nitrogen, Total Kjeldahl	2.12	mg/L	.25	1	EPA 351.2	09/15	17:30	JCL
OTHER								
Biochemical Oxygen Demand	5	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.7	mg/L	1	1	SM5310 C	09/14	23:55	ALD
RESIDUES								
Solids, Total Dissolved	200	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	147	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028534

Date Collected: 09/12/16 09:40
 Collected By: Client

Sample Desc: BM-7 Surface

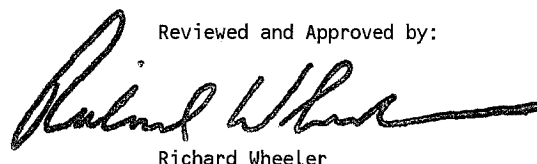
Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	770	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	09/15	16:45	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	02:11	JCL
Nitrogen, Nitrate	1.01	mg/L	.05	1	EPA 353.2	09/13	16:02	JCL
Nitrogen, Nitrite	0.13	mg/L	.05	1	EPA 353.2	09/13	14:25	JCL
Nitrogen, Total Kjeldahl	0.89	mg/L	.25	1	EPA 351.2	09/15	17:33	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	09/15	00:07	ALD
RESIDUES								
Solids, Total Dissolved	170	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	101	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028534

Date Collected: 09/12/16 09:40
Collected By: Client

Sample Desc: BM-7 Surface

Date Received: 09/12/16 13:20

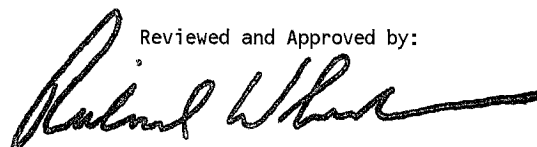
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028535

Date Collected: 09/12/16 09:40
 Collected By: Client

Sample Desc: BM-7 Mid-Depth

Date Received: 09/12/16 13:20

PWSID: 3060912

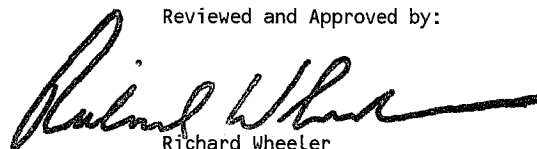
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	09/15	16:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.06	mg/L	.05	1	D6919-03	09/13	02:25	JCL
Nitrogen, Nitrate	1.02	mg/L	.05	1	EPA 353.2	09/13	16:03	JCL
Nitrogen, Nitrite	0.13	mg/L	.05	1	EPA 353.2	09/13	14:26	JCL
Nitrogen, Total Kjeldahl	1.13	mg/L	.25	1	EPA 351.2	09/15	17:34	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.4	mg/L	1	1	SM5310 C	09/15	01:21	ALD
RESIDUES								
Solids, Total Dissolved	181	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	86	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	100	mg/L	1	1	SM 2320 B	09/14	10:15	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028536

Date Collected: 09/12/16 09:40
 Collected By: Client

Sample Desc: BM-7 Deep

Date Received: 09/12/16 13:20

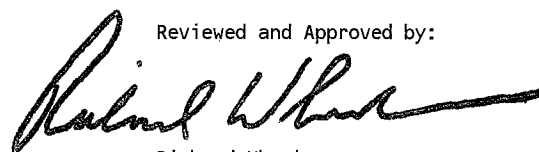
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	0.28	mg/L	.05	1	SM 4500P-E	09/15	16:25	AEH
Phosphorus as P, Total	0.28	mg/L	.01	1	SM 4500P-E	09/15	16:45	AEH
NITROGENS								
Nitrogen, Ammonia	0.45	mg/L	.05	1	D6919-03	09/13	02:40	JCL
Nitrogen, Nitrate	1.27	mg/L	.05	1	EPA 353.2	09/13	16:04	JCL
Nitrogen, Nitrite	0.14	mg/L	.05	1	EPA 353.2	09/13	14:27	JCL
Nitrogen, Total Kjeldahl	2.41	mg/L	.25	1	EPA 351.2	09/15	17:35	JCL
OTHER								
Biochemical Oxygen Demand	5	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	09/15	01:45	ALD
RESIDUES								
Solids, Total Dissolved	216	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	838	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	121	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028537

Date Collected: 09/12/16 10:50
 Collected By: Client

Sample Desc: BM-8 Surface

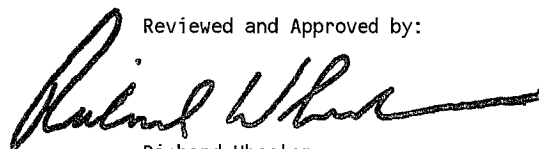
Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	490	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:05	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	02:55	JCL
Nitrogen, Nitrate	0.92	mg/L	.05	1	EPA 353.2	09/13	16:05	JCL
Nitrogen, Nitrite	0.12	mg/L	.05	1	EPA 353.2	09/13	14:30	JCL
Nitrogen, Total Kjeldahl	0.84	mg/L	.25	1	EPA 351.2	09/15	17:36	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	09/15	02:21	ALD
RESIDUES								
Solids, Total Dissolved	180	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	98	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028537

Date Collected: 09/12/16 10:50
Collected By: Client

Sample Desc: BM-8 Surface

Date Received: 09/12/16 13:20

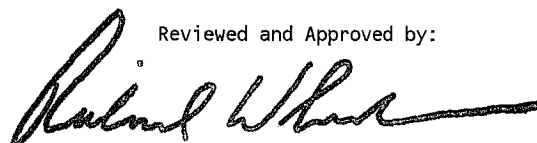
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028538

Date Collected: 09/12/16 10:50
 Collected By: Client

Sample Desc: BM-8 Mid-Depth

Date Received: 09/12/16 13:20

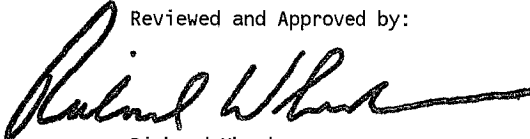
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	03:09	JCL
Nitrogen, Nitrate	0.93	mg/L	.05	1	EPA 353.2	09/13	16:07	JCL
Nitrogen, Nitrite	0.12	mg/L	.05	1	EPA 353.2	09/13	14:31	JCL
Nitrogen, Total Kjeldahl	0.77	mg/L	.25	1	EPA 351.2	09/15	17:39	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	3.1	mg/L	1	1	SM5310 C	09/15	09:43	ALD
RESIDUES								
Solids, Total Dissolved	169	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	100	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028539

Date Collected: 09/12/16 10:50
 Collected By: Client

Sample Desc: BM-8 Deep

Date Received: 09/12/16 13:20

PWSID: 3060912

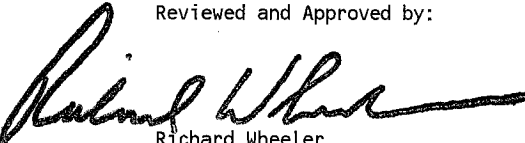
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.20	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.44	mg/L	.05	1	D6919-03	09/13	03:24	JCL
Nitrogen, Nitrate	1.07	mg/L	.05	1	EPA 353.2	09/13	16:08	JCL
Nitrogen, Nitrite	0.12	mg/L	.05	1	EPA 353.2	09/13	14:32	JCL
Nitrogen, Total Kjeldahl	1.08	mg/L	.25	1	EPA 351.2	09/15	17:40	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.7	mg/L	1	1	SM5310 C	09/15	09:56	ALD
RESIDUES								
Solids, Total Dissolved	198	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	8	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	116	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028540

Date Collected: 09/12/16 09:55
 Collected By: Client

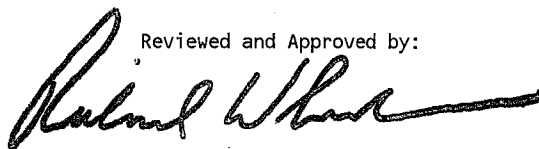
Sample Desc: BM-9 Surface

Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	870	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	03:38	JCL
Nitrogen, Nitrate	0.95	mg/L	.05	1	EPA 353.2	09/13	16:09	JCL
Nitrogen, Nitrite	0.12	mg/L	.05	1	EPA 353.2	09/13	14:33	JCL
Nitrogen, Total Kjeldahl	0.84	mg/L	.25	1	EPA 351.2	09/15	17:41	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	09/15	10:12	ALD
RESIDUES								
Solids, Total Dissolved	183	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	100	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028540

Date Collected: 09/12/16 09:55
Collected By: Client

Sample Desc: BM-9 Surface

Date Received: 09/12/16 13:20

PWSID: 3060912

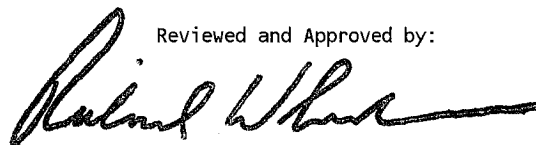
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.
- 02 The total colifrom sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028541

Date Collected: 09/12/16 09:55
 Collected By: Client

Sample Desc: BM-9 Mid-Depth

Date Received: 09/12/16 13:20

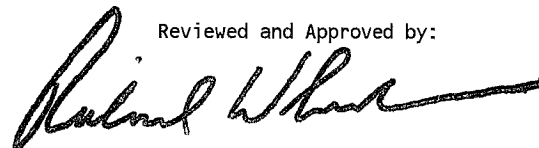
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.15	mg/L	.05	1	D6919-03	09/13	04:37	JCL
Nitrogen, Nitrate	1.13	mg/L	.05	1	EPA 353.2	09/13	16:10	JCL
Nitrogen, Nitrite	0.13	mg/L	.05	1	EPA 353.2	09/13	14:33	JCL
Nitrogen, Total Kjeldahl	0.82	mg/L	.25	1	EPA 351.2	09/15	17:42	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.7	mg/L	1	1	SM5310 c	09/15	10:25	ALD
RESIDUES								
Solids, Total Dissolved	184	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	111	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028542

Date Collected: 09/12/16 09:55
 Collected By: Client

Sample Desc: BM-9 Deep

Date Received: 09/12/16 13:20

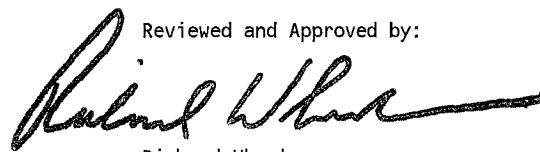
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	0.17	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.21	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.56	mg/L	.05	1	D6919-03	09/13	04:51	JCL
Nitrogen, Nitrate	1.41	mg/L	.05	1	EPA 353.2	09/13	16:13	JCL
Nitrogen, Nitrite	0.11	mg/L	.05	1	EPA 353.2	09/13	14:36	JCL
Nitrogen, Total Kjeldahl	1.92	mg/L	.25	1	EPA 351.2	09/15	17:45	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	<5	mg/L	5	5	SM5310 C	09/15	10:36	ALD
RESIDUES								
Solids, Total Dissolved	228	mg/L	5	1	SM 2540C	09/15	13:15	TMH
Solids, Total Suspended	98	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	136	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028543

Date Collected: 09/12/16 10:25
 Collected By: Client

Sample Desc: BM-10 Surface

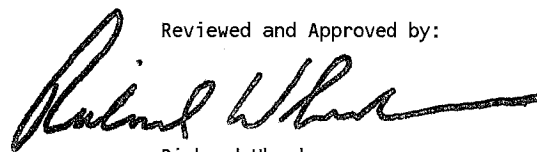
Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	290	/100ml	2	1	SM 9222D	09/12	14:15	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	05:06	JCL
Nitrogen, Nitrate	1.14	mg/L	.05	1	EPA 353.2	09/13	16:14	JCL
Nitrogen, Nitrite	0.11	mg/L	.05	1	EPA 353.2	09/13	14:37	JCL
Nitrogen, Total Kjeldahl	1.17	mg/L	.25	1	EPA 351.2	09/15	17:46	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.9	mg/L	1	1	SM5310 C	09/15	11:12	ALD
RESIDUES								
Solids, Total Dissolved	196	mg/L	5	1	SM 2540C	09/15	13:35	TMH
Solids, Total Suspended	9	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	104	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028543

Date Collected: 09/12/16 10:25
Collected By: Client

Sample Desc: BM-10 Surface

Date Received: 09/12/16 13:20

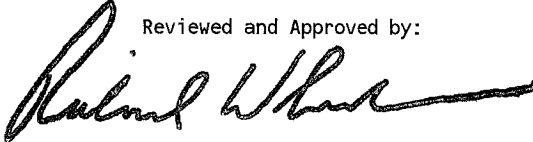
PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2S04 to pH <2 after the sample was received at the laboratory.
- 02 The total colifrom sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028544

Date Collected: 09/12/16 10:25
 Collected By: Client

Sample Desc: BM-10 Mid-Depth

Date Received: 09/12/16 13:20

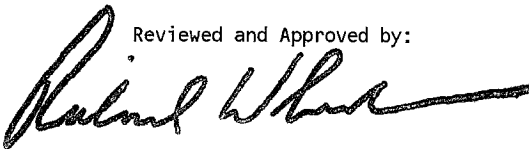
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	05:21	JCL
Nitrogen, Nitrate	1.23	mg/L	.05	1	EPA 353.2	09/13	16:15	JCL
Nitrogen, Nitrite	0.09	mg/L	.05	1	EPA 353.2	09/13	14:38	JCL
Nitrogen, Total Kjeldahl	1.20	mg/L	.25	1	EPA 351.2	09/15	17:47	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	09/15	11:37	ALD
RESIDUES								
Solids, Total Dissolved	187	mg/L	5	1	SM 2540C	09/15	13:35	TMH
Solids, Total Suspended	11	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	105	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028545

Date Collected: 09/12/16 10:25
 Collected By: Client

Sample Desc: BM-10 Deep

Date Received: 09/12/16 13:20

PWSID: 3060912

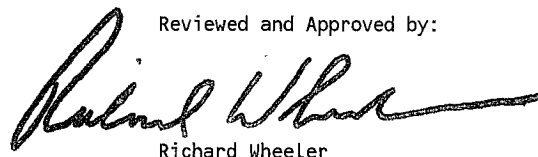
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/l	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.06	mg/l	.01	1	SM 4500P-E	09/15	16:50	AEH
NITROGENS								
Nitrogen, Ammonia	0.34	mg/l	.05	1	D6919-03	09/13	06:04	JCL
Nitrogen, Nitrate	2.37	mg/l	.05	1	EPA 353.2	09/13	16:16	JCL
Nitrogen, Nitrite	0.07	mg/l	.05	1	EPA 353.2	09/13	14:39	JCL
Nitrogen, Total Kjeldahl	1.28	mg/l	.25	1	EPA 351.2	09/15	17:48	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	2.4	mg/l	1	1	SM5310 C	09/15	12:16	ALD
RESIDUES								
Solids, Total Dissolved	249	mg/l	5	1	SM 2540C	09/15	13:35	TMH
Solids, Total Suspended	41	mg/l	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	146	mg/l	1	1	SM 2320 B	09/14	12:30	AEH

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/26/16
 Lab ID: 3156-16-0028546

Date Collected: 09/12/16 11:50
 Collected By: Client

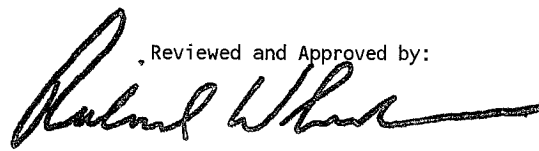
Sample Desc: BM-11 Surface

Date Received: 09/12/16 13:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	3100	/100mL	2	1	SM 9222D	09/12	14:33	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	09/13	10:00	TNS
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	09/13	15:15	AEH
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	09/15	16:30	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	09/15	16:55	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/13	06:19	JCL
Nitrogen, Nitrate	2.78	mg/L	.05	1	EPA 353.2	09/13	16:19	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/13	14:42	JCL
Nitrogen, Total Kjeldahl	0.62	mg/L	.25	1	EPA 351.2	09/15	17:50	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/13	13:20	EMW
Total Organic Carbon	3.5	mg/L	1	1	SM5310 C	09/15	12:28	ALD
RESIDUES								
Solids, Total Dissolved	222	mg/L	5	1	SM 2540C	09/15	13:35	TMH
Solids, Total Suspended	9	mg/L	3	1	SM 2540D	09/15	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	108	mg/L	1	1	SM 2320 B	09/14	12:30	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/26/16
Lab ID: 3156-16-0028546

Date Collected: 09/12/16 11:50
Collected By: Client

Sample Desc: BM-11 Surface

Date Received: 09/12/16 13:20

PWSID: 3060912

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	-----------	---------------	-----------	-----------	-----------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total colifrom sample was placed in the incubator on 09/12/2016 at 15:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156

Work Order: 006223

Project Leader: rxw

No: 278487

Customer: David Wertz

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: Wacik

Total Sampling Time (hours): _____ Bottle Prep by: _____
Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? (Y) N
Approved By: BSA

Samplers:

Sample No: 1 Desc: BM-1 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc, NA

Sample No: 2 Desc: BM-2 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc, NA

Sample No: 3 Desc: BM-2 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc, NA

Matrix: 0 Date: 9/12/16
Time: 1220

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: 0 Date: 9/12/16
Time: 0915

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: 0 Date: 9/12/16
Time: 0915

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 9/12/16 Time: 1240

Date: 9-12-16 Time: 1320

Sample entered by: 95M

M. J. REIDER ASSOCIATES, INC.

08/08/16 8:25:14 AM

Chain of Custody

No: 278487

Project Leader: rxw
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Work Order: 006223

Account: 3156

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? Y

Approved By: BSW

Date: 9/12/16
Time: 0915

Matrix: o

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Date: 9/12/16
Time: 1150

Matrix: o

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Date: 9/12/16
Time: 0900

Matrix: o

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Sample No: 4 Desc: BM-2 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AA AD

Sample No: 5 Desc: BM-5 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AA AD

fc, tc, TNS

Sample No: 6 Desc: BM-6 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AA AD

fc, tc, TNS

Relinquished by: [Signature] Received by: [Signature]

Date: 9/12/16 Time: 1140

Received for laboratory by: [Signature]

Date: 9-12-16 Time: 1320

Sample entered by: DSM

Chain of Custody

Account: 3156

Work Order: 006223

Project Leader: rxw

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WAOIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? N

Approved By: BSW

28532 Sample No: 7 Desc: BM-6 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, HH AD

28533 Sample No: 8 Desc: BM-6 Deep

nh3-n, tkn, Alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, HH AD

28534 Sample No: 9 Desc: BM-7 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, HH AD

fc, tc, TNS

Matrix: 0 Date: 9/12/16 Time: 0900

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 9/12/16 Time: 0900

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: 0 Date: 9/12/16 Time: 0940

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 9/12/16 Time: 1140

Date: 9-12-16 Time: 1320

Sample entered by: BSW

Chain of Custody

Account: 3156

Work Order: 006223

Project Leader: rxw

Customer: David Wertz

Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Laboratory Receipt Temp: 14 Deg C, If Temp Unacceptable, On Ice? Y
Approved By: BSW

Samplers: wacik

Total Sampling Time (hours): _____

Bottle Prep by: _____

28535 Sample No: 10 Desc: BM-7 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AA AD

28536 Sample No: 11 Desc: BM-7 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AA AD

28537 Sample No: 12 Desc: BM-8 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AA B

fc, tc, TNS

Matrix: o

Date: 9/12/16

Time: 0940

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o

Date: 9/12/16

Time: 0940

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o

Date: 9/12/16

Time: 1050

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 9/12/16 Time: 1140

Date: 9-12-16 Time: 1320

Sample entered by: [Signature]

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 278487
 Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
 Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000
 Phone: 703-387-5516 Ext: _____
 Samplers: WASIK

Remarks: _____
 Total Sampling Time (hours): _____ Bottle Prep by: _____
 Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? Y N
 Approved By: BSW

28538 Sample No: 13 Desc: BM-8 Mid-Depth
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod, AT AH

Matrix: o Date: 9/12/16
 Time: 1050
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;

28539 Sample No: 14 Desc: BM-8 Deep
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod, AT AH

Matrix: o Date: 9/12/16
 Time: 1050
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;

28540 Sample No: 15 Desc: BM-9 Surface
 nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod, AT AH
 fc, tc, TNS

Matrix: o Date: 9/12/16
 Time: 0955
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;
 F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
 Date: 9/12/16 Time: 1140

Received for Laboratory by: [Signature]
 Date: 9-12-16 Time: 1320

Sample entered by: OSM

Chain of Custody

Account: 3156 Work Order: 006223 Project Leader: rxw No: 278487
 Customer: David Wertz Work Order Description: Seasonal Monthly Blue Marsh Reservoir
 Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201-0000
 Phone: 703-387-5516 Ext: _____
 Samplers: WACIK Approved By: PSW

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? N

28541 Sample No: 16 Desc: BM-9 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod
 AH AH

Matrix: o Date: 9/12/16
 Time: 0955
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;

28542 Sample No: 17 Desc: BM-9 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod,
 AH AH

Matrix: o Date: 9/12/16
 Time: 0955
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;

28543 Sample No: 18 Desc: BM-10 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,
 no2-n, no3-n, d-po4-p, o-po4, bod,
 fc, tc,
 TRS AH AH

Matrix: o Date: 9/12/16
 Time: 1025
 A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
 B - 1 X 8oz Alk p w/ Cool to 6 C;
 C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
 D - 1 X L bod p w/ Cool to 6 C;
 E - 1 X Pt no3no2 p w/ Cool to 6 C;
 F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
 Date: 9/12/16 Time: 1140

Received for Laboratory by: [Signature]
 Date: 9/12/16 Time: 1320
 Sample entered by: PSW

M. J. REIDER ASSOCIATES, INC.

rxw
08/08/16 8:25:15 AM

Chain of Custody

No: 278487

Project Leader: rxw
Work Order: 006223
Work Order Description: Seasonal Monthly Blue Marsh Reservoir

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? N
Approved By: BSW

Remarks:

28544 Sample No: 19 Desc: BM-10 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,

AH AO

28545 Sample No: 20 Desc: BM-10 Deep

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,

AH AO

28546 Sample No: 21 Desc: BM-11 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,

AH AO

fc, tc, TRDS

Matrix: o Date: 9/12/16
Time: 1025

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 9/12/16
Time: 1025

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;

Matrix: o Date: 9/12/16
Time: 1150

- A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
- B - 1 X 8oz Alk p w/ Cool to 6 C;
- C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
- D - 1 X L bod p w/ Cool to 6 C;
- E - 1 X Pt no3no2 p w/ Cool to 6 C;
- F - 1 X 250mLMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 9/12/16 Time: 1130

Date: 9-12-16 Time: 1320

Sample entered by: BSW

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/11/16
Lab ID: 3156-16-0017853

Date Collected: 05/09/16 08:05
Collected By: apm

Sample Desc: SB-1

Date Received: 05/09/16 08:40

PWSID: 3060912

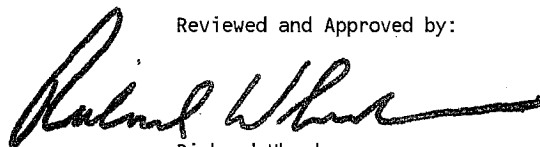
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	4	mpn/100ml	1	1	SM 9223B	05/10	09:25	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	05/09	09:18	TNS
Total Coliform Bacteria	120	mpn/100ml	1	1	SM 9223B	05/10	09:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
05/09/2016 at 09:15.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/11/16
 Lab ID: 3156-16-0017854

Date Collected: 05/09/16 08:10
 Collected By: apm

Sample Desc: SB-2

Date Received: 05/09/16 08:40

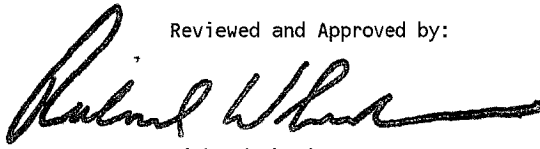
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	5	mpn/100mL	1	1	SM 9223B	05/10	09:25	TNS
Fecal Coliform	5	/100mL	2	1	SM 9222D	05/09	09:18	TNS
Total Coliform Bacteria	120	mpn/100mL	1	1	SM 9223B	05/10	09:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/09/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/11/16
 Lab ID: 3156-16-0017855

Date Collected: 05/09/16 08:15
 Collected By: apm

Sample Desc: SB-3

Date Received: 05/09/16 08:40

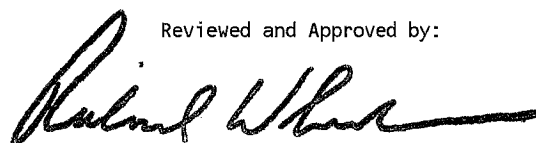
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100ml	1	1	SM 9223B	05/10	09:25	TNS
Fecal Coliform	10	/100mL	2	1	SM 9222D	05/09	09:18	TNS
Total Coliform Bacteria	170	mpn/100mL	1	1	SM 9223B	05/10	09:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/09/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275096
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: ARM

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 5 Deg C. If Temp Unacceptable, On Ice Y N
Approved By: ARM

17853	Sample No: 1	Desc: SB-1
	fc, ec, tcb,	
17854	Sample No: 2	Desc: SB-2
	fc, ec, tcb,	
17855	Sample No: 3	Desc: SB-3
	fc, ec, tcb,	

Matrix: o	Date: 5/9/16
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: 0805
Matrix: o	Date: 5/9/16
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: 0810
Matrix: o	Date: 5/9/16
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: 0815

Relinquished by: NJP Received for laboratory by: [Signature]
 Date: 5/9/16 Time: 0820 Date: 5/9/16 Time: 0840

Sample entered by: oym



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/18/16
 Lab ID: 3156-16-0018280

Date Collected: 05/12/16 07:45
 Collected By: apm

Sample Desc: SB-1

Date Received: 05/12/16 08:20

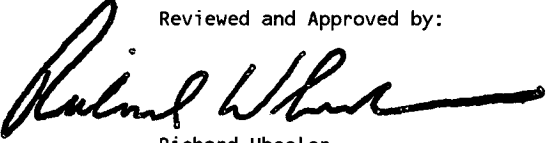
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100ml	1	1	SM 9223B	05/13	09:30	TNS
Fecal Coliform	<2	/100mL	2	1	SM 9222D	05/12	09:23	TNS
Total Coliform Bacteria	180	mpn/100ml	1	1	SM 9223B	05/13	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/12/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/18/16
 Lab ID: 3156-16-0018281

Date Collected: 05/12/16 07:50
 Collected By: apm

Sample Desc: SB-2

Date Received: 05/12/16 08:20

PWSID: 3060912

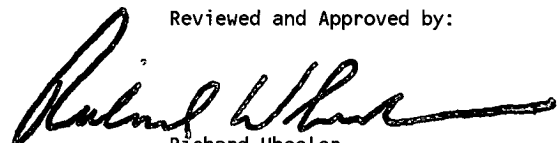
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	4	mpn/100ml	1	1	SM 9223B	05/13	09:30	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	05/12	09:23	TNS
Total Coliform Bacteria	290	mpn/100ml	1	1	SM 9223B	05/13	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/12/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

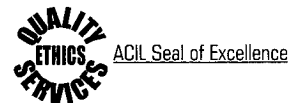

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/18/16
 Lab ID: 3156-16-0018282

Date Collected: 05/12/16 07:55
 Collected By: apm

Sample Desc: SB-3

Date Received: 05/12/16 08:20

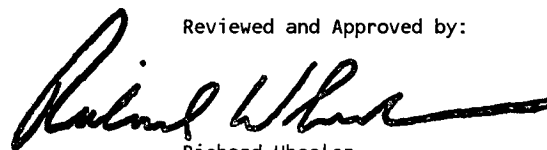
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	05/13	09:30	TNS
Fecal Coliform	2	/100mL	2	1	SM 9222D	05/12	09:23	TNS
Total Coliform Bacteria	170	mpn/100ml	1	1	SM 9223B	05/13	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/12/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156

Work Order: 006222

Project Leader: rxw

No: 275234

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Total Sampling Time (hours):

Bottle Prep by:

Phone: 703-387-5516

Ext:

Samplers: ARM

Laboratory Receipt Temp: 3 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: ARM

Sample No:	1	2	3
18280	1	2	3
	fc, ec, tcb,	fc, ec, tcb,	fc, ec, tcb,
18281	1	2	3
	fc, ec, tcb,	fc, ec, tcb,	fc, ec, tcb,
18282	1	2	3
	fc, ec, tcb,	fc, ec, tcb,	fc, ec, tcb,

Matrix: o

Date: 5-12-16

Time: 0745

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Matrix: o

Date: 5-12-16

Time: 0750

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Matrix: o

Date: 5-12-16

Time: 0755

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

[Signature]

[Signature]

Relinquished by: N/P

Received for laboratory by: [Signature]

Date: 5-12-16

Date: 5/12/16

Time: 0805

Time: 0820

Sample entered by: ARM



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/20/16
 Lab ID: 3156-16-0018732

Date Collected: 05/16/16 07:45
 Collected By: jbs

Sample Desc: SB-1

Date Received: 05/16/16 08:15

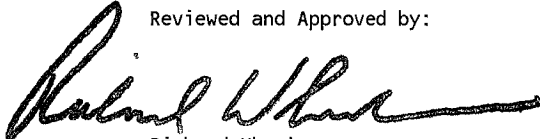
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	05/17	09:30	TNS
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/16	09:10	TNS
Total Coliform Bacteria	74	mpn/100ml	1	1	SM 9223B	05/17	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/16/2016 at 09:10.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/20/16
 Lab ID: 3156-16-0018733

Date Collected: 05/16/16 07:50
 Collected By: jbs

Sample Desc: SB-2

Date Received: 05/16/16 08:15

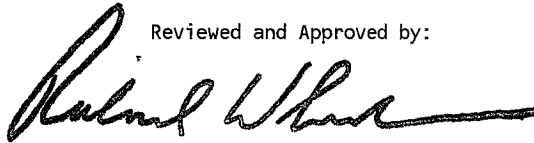
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	05/17	09:30	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	05/16	09:10	TNS
Total Coliform Bacteria	63	mpn/100ml	1	1	SM 9223B	05/17	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/16/2016 at 09:10.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/20/16
Lab ID: 3156-16-0018734

Date Collected: 05/16/16 07:55
Collected By: jbs

Sample Desc: SB-3

Date Received: 05/16/16 08:15

PWSID: 3060912

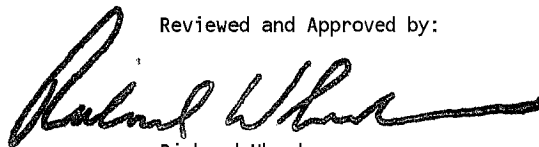
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	05/17	09:30	TNS
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/16	09:10	TNS
Total Coliform Bacteria	100	mpn/100ml	1	1	SM 9223B	05/17	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/16/2016 at 09:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275305
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: TBS

Samplers: _____

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? NO
Approved By: TBS

=====

Sample No: 1	Desc: SB-1	Matrix: 0	Date: <u>5-16-16</u>
<u>TNS</u>	fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0745</u>
Sample No: 2	Desc: SB-2	Matrix: 0	Date: <u>5-16-16</u>
<u>TNS</u>	fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0750</u>
Sample No: 3	Desc: SB-3	Matrix: 0	Date: <u>5-16-16</u>
<u>TNS</u>	fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0755</u>

18732
18733
18734

Relinquished by: NP Received by: [Signature]
 Date: 5-16-16 Time: 0800
 Received for Laboratory by: [Signature]
 Date: 5-16-16 Time: 0815
 Sample entered by: DSM



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0019429

Date Collected: 05/19/16 08:15
 Collected By: apm

Sample Desc: SB-1

Date Received: 05/19/16 08:50

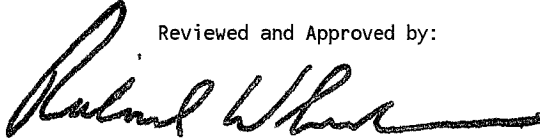
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	16	mpn/100mL	1	1	SM 9223B	05/20	10:50	TNS
Fecal Coliform	20	/100mL	2	1	SM 9222D	05/19	09:12	TNS
Total Coliform Bacteria	410	mpn/100mL	1	1	SM 9223B	05/20	10:50	TNS

COMMENTS

- 01 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.
- 02 The total coliform sample was placed in the incubator on 05/19/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

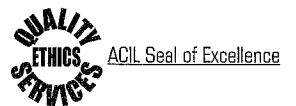
Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/24/16
 Lab ID: 3156-16-0019430

Date Collected: 05/19/16 08:20
 Collected By: apm

Sample Desc: SB-2

Date Received: 05/19/16 08:50

PWSID: 3060912

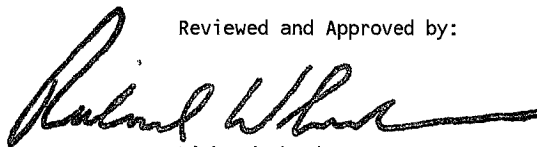
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	5	mpn/100ml	1	1	SM 9223B	05/20	10:50	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	05/19	09:12	TNS
Total Coliform Bacteria	360	mpn/100ml	1	1	SM 9223B	05/20	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/19/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 05/24/16
Lab ID: 3156-16-0019431

Date Collected: 05/19/16 08:25
Collected By: apm

Sample Desc: SB-3

Date Received: 05/19/16 08:50

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	05/20	10:50	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	05/19	09:12	TNS
Total Coliform Bacteria	220	mpn/100ml	1	1	SM 9223B	05/20	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/19/2016 at 09:15.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275562
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: ARM
Samplers: ARM
Total Sampling Time (hours): _____ Bottle Prep by: _____
Laboratory Receipt Temp: 4 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: ARM

19429	Sample No: 1	Desc: SB-1	Matrix: o	Date: 5/19/16
		fc, ec, tcb,		Time: 0815
19430	Sample No: 2	Desc: SB-2	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
		fc, ec, tcb,		Date: 5/19/16
19431	Sample No: 3	Desc: SB-3	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
		fc, ec, tcb,		Time: 0820
				Date: 5/19/16
				Time: 0835

Relinquished by: N/R Received by: [Signature]
 Date: 5/19/16 Time: 0835
 Received for Laboratory by: [Signature]
 Date: 5/19/16 Time: 0850
 Sample entered by: SM



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/26/16
 Lab ID: 3156-16-0019618

Date Collected: 05/23/16 07:25
 Collected By: jbs

Sample Desc: SB-1

Date Received: 05/23/16 08:00

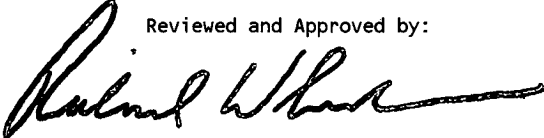
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	5	mpn/100ml	1	1	SM 9223B	05/24	10:05	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	05/23	09:30	TNS
Total Coliform Bacteria	310	mpn/100ml	1	1	SM 9223B	05/24	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/23/2016 at 09:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/26/16
 Lab ID: 3156-16-0019619

Date Collected: 05/23/16 07:30
 Collected By: jbs

Sample Desc: SB-2

Date Received: 05/23/16 08:00

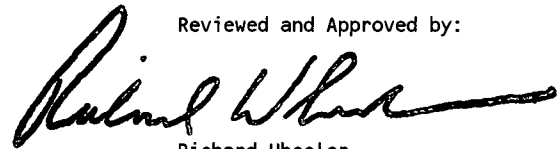
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	05/24	10:05	TNS
Fecal Coliform	2	/100mL	2	1	SM 9222D	05/23	09:30	TNS
Total Coliform Bacteria	260	mpn/100mL	1	1	SM 9223B	05/24	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/23/2016 at 09:20.

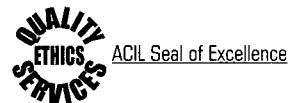
Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 05/26/16
 Lab ID: 3156-16-0019620

Date Collected: 05/23/16 07:35
 Collected By: jbs

Sample Desc: SB-3

Date Received: 05/23/16 08:00

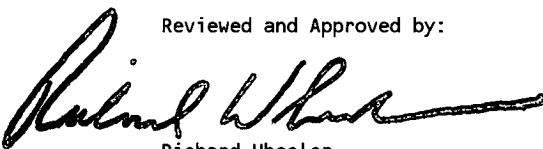
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	5	mpn/100ml	1	1	SM 9223B	05/24	10:05	TNS
Fecal Coliform	6	/100ml	2	1	SM 9222D	05/23	09:30	TNS
Total Coliform Bacteria	140	mpn/100ml	1	1	SM 9223B	05/24	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/23/2016 at 09:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



05/23/16 6:12:00 AM

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275611

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: JBS

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 10 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

Sample No:	1	2	3
Desc:	SB-1	SB-2	SB-3
Matrix:	o	o	o
Date:	5-23-16	5-23-16	5-23-16
Time:	0725	0730	0735
Matrix:	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Relinquished by: AW Received by: [Signature]
Date: 5-23-16 Time: 0740
Received for laboratory by: [Signature]
Date: 5-23-16 Time: 0800

Sample entered by: [Signature]



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/01/16
 Lab ID: 3156-16-0020015

Date Collected: 05/26/16 07:25
 Collected By: JBS

Sample Desc: SB-1

Date Received: 05/26/16 08:05

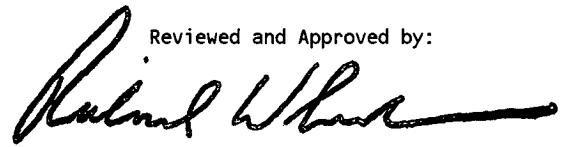
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	05/27	09:35	TNS
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/26	09:10	TNS
Total Coliform Bacteria	250	mpn/100ml	1	1	SM 9223B	05/27	09:35	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/26/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/01/16
 Lab ID: 3156-16-0020016

Date Collected: 05/26/16 07:30
 Collected By: JBS

Sample Desc: SB-2

Date Received: 05/26/16 08:05

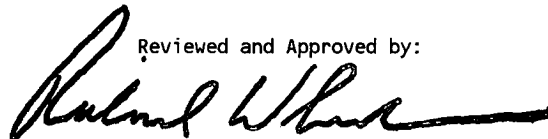
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100ml	1	1	SM 9223B	05/27	09:35	TNS
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/26	09:10	TNS
Total Coliform Bacteria	550	mpn/100ml	1	1	SM 9223B	05/27	09:35	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/26/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/01/16
 Lab ID: 3156-16-0020017

Date Collected: 05/26/16 07:35
 Collected By: JBS

Sample Desc: SB-3

Date Received: 05/26/16 08:05

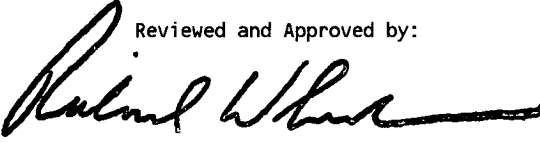
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	05/27	09:35	TNS
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/26	09:10	TNS
Total Coliform Bacteria	460	mpn/100ml	1	1	SM 9223B	05/27	09:35	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/26/2016 at 09:15.

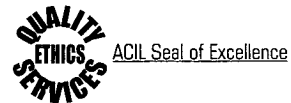
Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



jbs
05/26/16 6:11:23 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275766
Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: JBS

Samplers: _____

Remarks: _____

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? (Y) N
Approved By: JBS

Sample No:	1.	Desc:	SB-1	Matrix:	o	Date:	5-26-16
20015	NS	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		Time:	0725
20016	2	Desc:	SB-2	Matrix:	o	Date:	5-26-16
20017	3	Desc:	SB-3	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		Time:	0730
	fc, ec, tcb,			Matrix:	o	Date:	5-26-16
				A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		Time:	0735

Relinquished by: NP Received by: [Signature]
 Date: 5-26-16 Time: 0740
 Received for laboratory by: [Signature]
 Date: 5-26-16 Time: 0805
 Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/06/16
Lab ID: 3156-16-0020451

Date Collected: 05/31/16 06:35
Collected By: jbs

Sample Desc: SB-1

Date Received: 05/31/16 07:05

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	29	mpn/100ml	1	1	SM 9223B	06/01	12:25	TNS
Fecal Coliform	36	/100ml	2	1	SM 9222D	05/31	09:20	TNS
Total Coliform Bacteria	1400	mpn/100ml	1	1	SM 9223B	06/01	12:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/31/2016 at 09:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/06/16
 Lab ID: 3156-16-0020452

Date Collected: 05/31/16 06:40
 Collected By: jbs

Sample Desc: SB-2

Date Received: 05/31/16 07:05

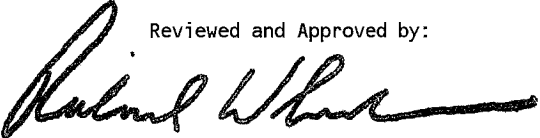
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	46	mpn/100mL	1	1	SM 9223B	06/01	12:25	TNS
Fecal Coliform	50	/100mL	2	1	SM 9222D	05/31	09:20	TNS
Total Coliform Bacteria	730	mpn/100mL	1	1	SM 9223B	06/01	12:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/31/2016 at 09:30.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/06/16
Lab ID: 3156-16-0020453

Date Collected: 05/31/16 06:45
Collected By: jbs

Sample Desc: SB-3

Date Received: 05/31/16 07:05

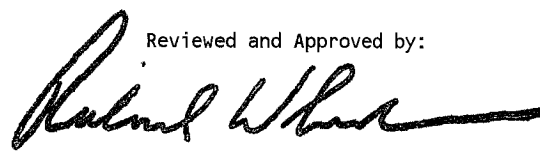
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	34	mpn/100ml	1	1	SM 9223B	06/01	12:25	TNS
Fecal Coliform	39	/100ml	2	1	SM 9222D	05/31	09:20	TNS
Total Coliform Bacteria	980	mpn/100ml	1	1	SM 9223B	06/01	12:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 05/31/2016 at 09:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275869
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: JBS

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

Sample No:	1	2	3
Desc:	SB-1	SB-2	SB-3
fc, ec, tcb,			

Matrix:	Date:	Time:
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	5-31-16	0655
Matrix: 0		
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	5-31-16	0640
Matrix: 0		
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	5-31-16	0645
Matrix: 0		

Relinquished by: AP Received by: [Signature]
Date: 5-31-16 Time: 0650

Received for laboratory by: [Signature]
Date: 5-31-16 Time: 0705

Sample entered by: [Signature]

20451
20452
20453

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/07/16
Lab ID: 3156-16-0020719

Date Collected: 06/02/16 06:20
Collected By: jbs

Sample Desc: SB-1

Date Received: 06/02/16 06:55

PWSID: 3060912

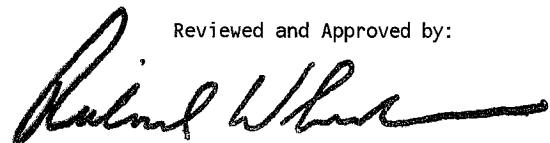
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	16	mpn/100mL	1	1	SM 9223B	06/03	08:25	TNS
Fecal Coliform	18	/100mL	2	1	SM 9222D	06/02	07:38	TNS
Total Coliform Bacteria	690	mpn/100mL	1	1	SM 9223B	06/03	08:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/02/2016 at 07:35.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/07/16
 Lab ID: 3156-16-0020720

Date Collected: 06/02/16 06:25
 Collected By: jbs

Sample Desc: SB-2

Date Received: 06/02/16 06:55

PWSID: 3060912

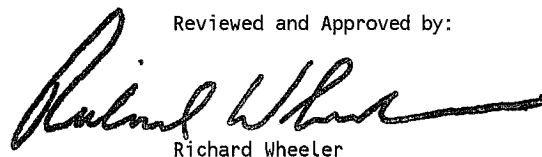
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	06/03	08:25	TNS
Fecal Coliform	6	/100mL	2	1	SM 9222D	06/02	07:38	TNS
Total Coliform Bacteria	310	mpn/100mL	1	1	SM 9223B	06/03	08:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/02/2016 at 07:35.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/07/16
 Lab ID: 3156-16-0020721

Date Collected: 06/02/16 06:30
 Collected By: jbs

Sample Desc: SB-3

Date Received: 06/02/16 06:55

PWSID: 3060912

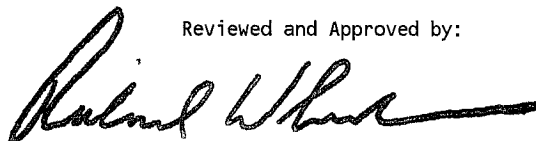
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	06/03	08:25	TNS
Fecal Coliform	10	/100mL	2	1	SM 9222D	06/02	07:38	TNS
Total Coliform Bacteria	550	mpn/100mL	1	1	SM 9223B	06/03	08:25	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/02/2016 at 07:35.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 275978
Customer: David Wertz Work Order Description: Beaches 1, 2, 3
Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: JBS
Total Sampling Time (hours): _____ Bottle Prep by: _____
Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? (Y) N
Approved By: JBS

Sample No:	Desc:	Matrix:	Date:	Time:
20719 20720 20721	1 SB-1 fc, ec, tcb,	o	6-2-16	0620
	2 SB-2 fc, ec, tcb,	o	6-2-16	0625
	3 SB-3 fc, ec, tcb,	o	6-2-16	0630

Relinquished by: NP Received by: [Signature]
 Date: 6-2-16 Time: 0635
 Received for laboratory by: [Signature]
 Date: 6-2-16 Time: 0655
 Sample entered by: [Signature]



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/16/16
 Lab ID: 3156-16-0021132

Date Collected: 06/06/16 07:10
 Collected By: JBS

Sample Desc: SB-1

Date Received: 06/06/16 07:45

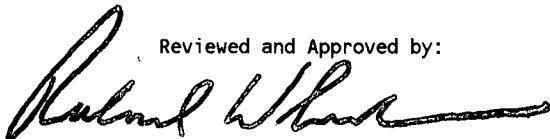
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	37	mpn/100ml	1	1	SM 9223B	06/07	10:45	TNS
Fecal Coliform	42	/100ml	2	1	SM 9222D	06/06	09:50	TNS
Total Coliform Bacteria	360	mpn/100ml	1	1	SM 9223B	06/07	10:45	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/06/2016 at 09:50.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/16/16
 Lab ID: 3156-16-0021133

Date Collected: 06/06/16 07:15
 Collected By: JBS

Sample Desc: SB-2

Date Received: 06/06/16 07:45

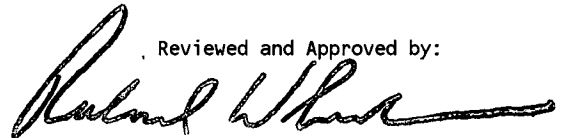
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	15	mpn/100ml	1	1	SM 9223B	06/07	10:45	TNS
Fecal Coliform	20	/100ml	2	1	SM 9222D	06/06	09:50	TNS
Total Coliform Bacteria	520	mpn/100ml	1	1	SM 9223B	06/07	10:45	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/06/2016 at 09:50.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/16/16
 Lab ID: 3156-16-0021134

Date Collected: 06/06/16 07:20
 Collected By: JBS

Sample Desc: SB-3

Date Received: 06/06/16 07:45

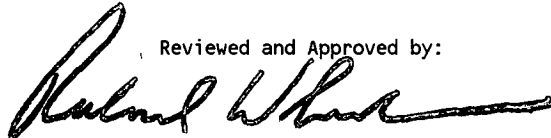
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	32	mpn/100ml	1	1	SM 9223B	06/07	10:45	TNS
Fecal Coliform	34	/100ml	2	1	SM 9222D	06/06	09:50	TNS
Total Coliform Bacteria	410	mpn/100ml	1	1	SM 9223B	06/07	10:45	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/06/2016 at 09:50.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 276136
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: JBS

Samplers: _____

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

21132
21133
21134

Sample No: 1	Desc: SB-1	Matrix: 0	Date: <u>6-6-16</u>
fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0710</u>
Sample No: 2	Desc: SB-2	Matrix: 0	Date: <u>6-6-16</u>
fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0713</u>
Sample No: 3	Desc: SB-3	Matrix: 0	Date: <u>6-6-16</u>
fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0710</u>

Relinquished by: NP Received by: [Signature]
Date: 6-6-16 Time: 0725

Received for laboratory by: [Signature]
Date: 6-6-12 Time: 0745

Sample entered by: DYM



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/15/16
 Lab ID: 3156-16-0021640

Date Collected: 06/09/16 06:35
 Collected By: jbs

Sample Desc: SB-1

Date Received: 06/09/16 07:05

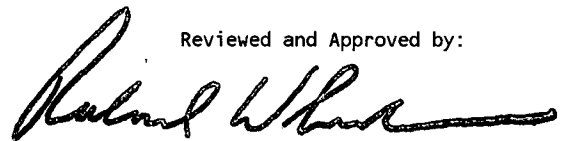
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	06/10	09:50	TNS
Fecal Coliform	3	/100mL	2	1	SM 9222D	06/09	08:50	TNS
Total Coliform Bacteria	1100	mpn/100ml	1	1	SM 9223B	06/10	09:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/09/2016 at 08:55.

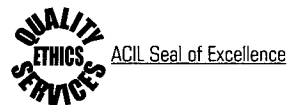
Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/15/16
 Lab ID: 3156-16-0021641

Date Collected: 06/09/16 06:40
 Collected By: jbs

Sample Desc: SB-2

Date Received: 06/09/16 07:05

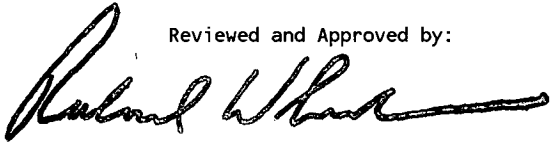
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	06/10	09:50	TNS
Fecal Coliform	5	/100ml	2	1	SM 9222D	06/09	08:50	TNS
Total Coliform Bacteria	580	mpn/100ml	1	1	SM 9223B	06/10	09:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
 06/09/2016 at 08:55.

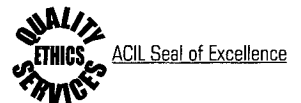
Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/15/16
 Lab ID: 3156-16-0021642

Date Collected: 06/09/16 06:45
 Collected By: jbs

Sample Desc: SB-3

Date Received: 06/09/16 07:05

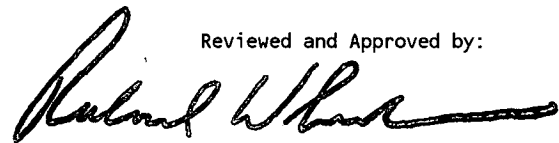
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	06/10	09:50	TNS
Fecal Coliform	6	/100ml	2	1	SM 9222D	06/09	08:50	TNS
Total Coliform Bacteria	460	mpn/100ml	1	1	SM 9223B	06/10	09:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/09/2016 at 08:55.

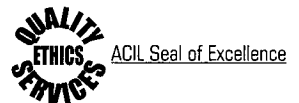
Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



06/09/16 5:56:39 AM

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 276342

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: DBS

Remarks:

Total Sampling Time (hours): 9 Bottle Prep by:

Laboratory Receipt Temp: 9 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

21640
21641
21642

Sample No:	1	2	3
Desc:	SB-1	SB-2	SB-3
	fc, ec, tcb,	fc, ec, tcb,	fc, ec, tcb,

Matrix:	Date:	Time:
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	6-9-16	0635
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	6-9-16	0670
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	6-9-16	0675

Relinquished by: AWP Received by: [Signature]
Date: 6-9-16 Time: 0650
Received for laboratory by: [Signature]
Date: 6-9-16 Time: 0705
Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/29/16
Lab ID: 3156-16-0022087

Date Collected: 06/13/16 06:25
Collected By: JBS

Sample Desc: SB-1

Date Received: 06/13/16 07:05

PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	06/14	10:50	TNS
Fecal Coliform	10	/100ml	2	1	SM 9222D	06/13	09:05	TNS
Total Coliform Bacteria	460	mpn/100ml	1	1	SM 9223B	06/14	10:50	TNS

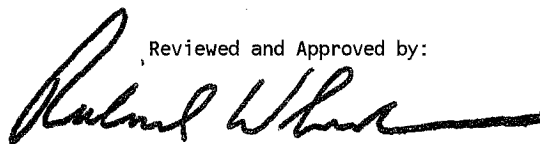
COMMENTS

01 The total coliform sample was placed in the incubator on 06/13/2016 at 09:10.

02 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/29/16
Lab ID: 3156-16-0022088

Date Collected: 06/13/16 06:30
Collected By: JBS

Sample Desc: SB-2

Date Received: 06/13/16 07:05

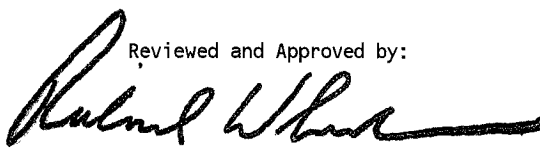
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	14	mpn/100ml	1	1	SM 9223B	06/14	10:50	TNS
Fecal Coliform	18	/100ml	2	1	SM 9222D	06/13	09:05	TNS
Total Coliform Bacteria	390	mpn/100ml	1	1	SM 9223B	06/14	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/13/2016 at 09:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

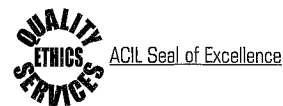
Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/29/16
Lab ID: 3156-16-0022089

Date Collected: 06/13/16 06:35
Collected By: JBS

Sample Desc: SB-3

Date Received: 06/13/16 07:05

PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	11	mpn/100mL	1	1	SM 9223B	06/14	10:50	TNS
Fecal Coliform	15	/100mL	2	1	SM 9222D	06/13	09:05	TNS
Total Coliform Bacteria	330	mpn/100mL	1	1	SM 9223B	06/14	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/13/2016 at 09:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

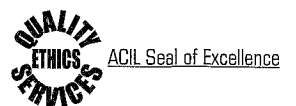
Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0022475

Date Collected: 06/16/16 08:00
Collected By: jbs

Sample Desc: SB-1

Date Received: 06/16/16 08:30

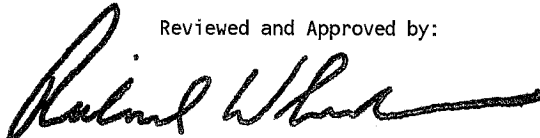
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100mL	1	1	SM 9223B	06/17	10:00	TNS
Fecal Coliform	10	/100mL	2	1	SM 9222D	06/16	08:50	TNS
Total Coliform Bacteria	870	mpn/100mL	1	1	SM 9223B	06/17	10:00	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
06/16/2016 at 09:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0022476

Date Collected: 06/16/16 08:05
Collected By: jbs

Sample Desc: SB-2

Date Received: 06/16/16 08:30

PWSID: 3060912

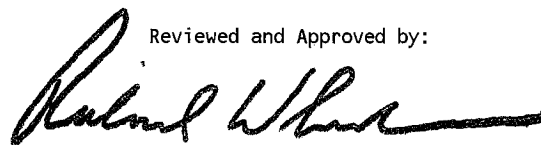
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	9	mpn/100mL	1	1	SM 9223B	06/17	10:00	TNS
Fecal Coliform	10	/100mL	2	1	SM 9222D	06/16	08:50	TNS
Total Coliform Bacteria	310	mpn/100mL	1	1	SM 9223B	06/17	10:00	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
06/16/2016 at 09:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/21/16
Lab ID: 3156-16-0022477

Date Collected: 06/16/16 08:10
Collected By: jbs

Sample Desc: SB-3

Date Received: 06/16/16 08:30

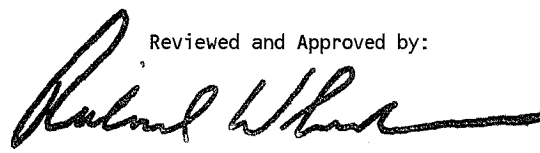
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100mL	1	1	SM 9223B	06/17	10:00	TNS
Fecal Coliform	6	/100mL	2	1	SM 9222D	06/16	08:50	TNS
Total Coliform Bacteria	310	mpn/100mL	1	1	SM 9223B	06/17	10:00	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/16/2016 at 09:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



jbs
06/16/16 6:18:40 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 276585
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: JBS

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 18 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

Sample No:	Desc:	SB-1	Matrix:	o	Date:	Time:
22475	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		6-16-16	0830
22476	fc, ec, tcb,	SB-2	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		6-16-16	0830
22477	fc, ec, tcb,	SB-3	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		6-16-16	0830

Relinquished by: JP Received by: [Signature]
 Date: 6-16-16 Time: 0815
 Received for laboratory by: [Signature] Time: 0830
 Date: 6-16-16 Time: _____
 Sample entered by: [Signature]



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/27/16
 Lab ID: 3156-16-0022923

Date Collected: 06/20/16 07:25
 Collected By: jbs

Sample Desc: SB-1

Date Received: 06/20/16 08:00

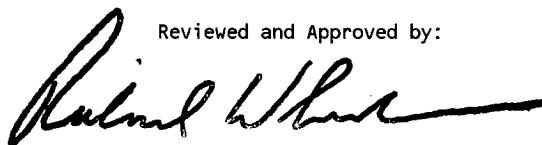
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100ml	1	1	SM 9223B	06/21	11:00	TNS
Fecal Coliform	6	/100ml	2	1	SM 9222D	06/20	10:20	TNS
Total Coliform Bacteria	920	mpn/100ml	1	1	SM 9223B	06/21	11:00	TNS

COMMENTS

- 01 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.
- 02 The total coliform sample was placed in the incubator on 06/20/2016 at 10:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/27/16
 Lab ID: 3156-16-0022924

Date Collected: 06/20/16 07:30
 Collected By: jbs

Sample Desc: SB-2

Date Received: 06/20/16 08:00

PWSID: 3060912

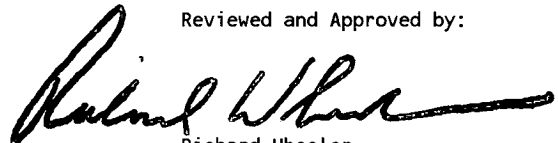
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	06/21	11:00	TNS
Fecal Coliform	3	/100ml	2	1	SM 9222D	06/20	10:20	TNS
Total Coliform Bacteria	330	mpn/100ml	1	1	SM 9223B	06/21	11:00	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/20/2016 at 10:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

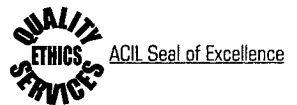
This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 06/27/16
 Lab ID: 3156-16-0022925

Date Collected: 06/20/16 07:35
 Collected By: jbs

Sample Desc: SB-3

Date Received: 06/20/16 08:00

PWSID: 3060912

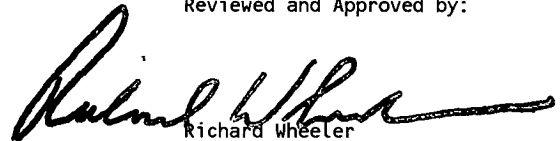
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	11	mpn/100ml	1	1	SM 9223B	06/21	11:00	TNS
Fecal Coliform	23	/100ml	2	1	SM 9222D	06/20	10:20	TNS
Total Coliform Bacteria	160	mpn/100ml	1	1	SM 9223B	06/21	11:00	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/20/2016 at 10:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



06/20/16 6:59:55 AM

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 276674
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: JBS

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

Sample No:	1	2	3
Desc:	SB-1	SB-2	SB-3
fc, ec, tcb,			

Matrix:	o	o	o
Date:	6-20-16	6-20-16	6-20-16
Time:	0735	0730	0735
A - 1 X 125ml bact p w/ Sterile/Na2S2O3,			

Relinquished by: AP Received by: [Signature]
Date: 6-20-16 Time: 0740
Received for laboratory by: [Signature]
Date: 6-20-16 Time: 0800
Sample entered by: JBS

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/29/16
Lab ID: 3156-16-0023243

Date Collected: 06/23/16 06:40
Collected By: jbs

Sample Desc: SB-1

Date Received: 06/23/16 07:20

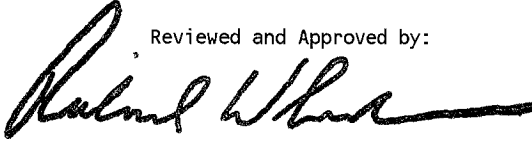
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	06/24	09:50	TNS
Fecal Coliform	3	/100mL	2	1	SM 9222D	06/23	08:35	TNS
Total Coliform Bacteria	180	mpn/100mL	1	1	SM 9223B	06/24	09:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
06/23/2016 at 08:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/29/16
Lab ID: 3156-16-0023244

Date Collected: 06/23/16 06:45
Collected By: jbs

Sample Desc: SB-2

Date Received: 06/23/16 07:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	06/24	09:50	TNS
Fecal Coliform	2	/100ml	2	1	SM 9222D	06/23	08:35	TNS
Total Coliform Bacteria	190	mpn/100ml	1	1	SM 9223B	06/24	09:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 06/23/2016 at 08:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/29/16
Lab ID: 3156-16-0023245

Date Collected: 06/23/16 06:50
Collected By: jbs

Sample Desc: SB-3

Date Received: 06/23/16 07:20

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	4	mpn/100ml	1	1	SM 9223B	06/24	09:50	TNS
Fecal Coliform	5	/100mL	2	1	SM 9222D	06/23	08:35	TNS
Total Coliform Bacteria	290	mpn/100ml	1	1	SM 9223B	06/24	09:50	TNS

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 276836
 Customer: David Wertz Work Order Description: Beaches 1, 2, 3
 Address: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Phone: 703-387-5516 Ext: _____
 Samplers: _____
 Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? (D) N
 Approved By: JBS

Sample No:	Desc:	SB-1	Matrix:	o	Date:	Time:
23243	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		6-23-16	0940
23244	fc, ec, tcb,	SB-2	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		6-23-16	0645
23245	fc, ec, tcb,	SB-3	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		6-23-16	0640

Relinquished by: NP Received by: [Signature]
 Date: 6-23-16 Time: 0700
 Received for laboratory by: [Signature]
 Date: 6-23-16 Time: 1020

Sample entered by: DJM

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/30/16
Lab ID: 3156-16-0023628

Date Collected: 06/27/16 07:00
Collected By: jbs

Sample Desc: SB-1

Date Received: 06/27/16 07:35

PWSID: 3060912

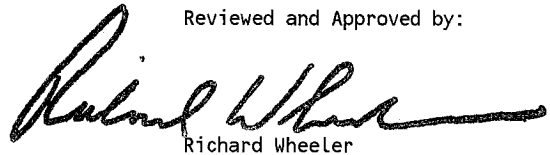
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	28	mpn/100ml	1	1	SM 9223B	06/28	11:00	RES
Fecal Coliform	31	/100ml	2	1	SM 9222D	06/27	10:45	RES
Total Coliform Bacteria	820	mpn/100ml	1	1	SM 9223B	06/28	11:00	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 06/27/2016 at 10:50.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/30/16
Lab ID: 3156-16-0023629

Date Collected: 06/27/16 07:05
Collected By: jbs

Sample Desc: SB-2

Date Received: 06/27/16 07:35

PWSID: 3060912

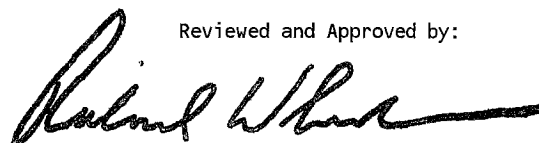
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	11	mpn/100mL	1	1	SM 9223B	06/28	11:00	RES
Fecal Coliform	21	/100mL	2	1	SM 9222D	06/27	10:45	RES
Total Coliform Bacteria	440	mpn/100mL	1	1	SM 9223B	06/28	11:00	RES

COMMENTS

01 The total coliform sample was placed in the incubator on
06/27/2016 at 10:50.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 06/30/16
Lab ID: 3156-16-0023630

Date Collected: 06/27/16 07:10
Collected By: jbs

Sample Desc: SB-3

Date Received: 06/27/16 07:35

PWSID: 3060912

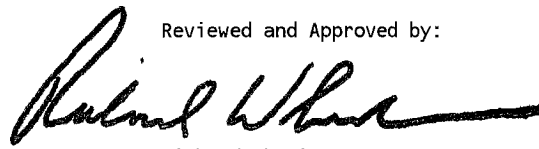
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	7	mpn/100mL	1	1	SM 9223B	06/28	11:00	RES
Fecal Coliform	8	/100mL	2	1	SM 9222D	06/27	10:45	RES
Total Coliform Bacteria	340	mpn/100mL	1	1	SM 9223B	06/28	11:00	RES

COMMENTS

01 The total coliform sample was placed in the incubator on
06/27/2016 at 10:50.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 276894
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: _____

Samplers: JBS Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 11 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JBS

Sample No: 1	Desc: SB-1	Matrix: 0	Date: <u>6-27-16</u>
fc, ec, tdb,			Time: <u>0700</u>
Sample No: 2	Desc: SB-2	Matrix: 0	Date: <u>6-27-16</u>
fc, ec, tdb,			Time: <u>0705</u>
Sample No: 3	Desc: SB-3	Matrix: 0	Date: <u>6-27-16</u>
fc, ec, tdb,			Time: <u>0710</u>

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Date: <u>6-27-16</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0700</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Date: <u>6-27-16</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0705</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Date: <u>6-27-16</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0710</u>

Relinquished by: NP Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6-27-16 Time: 0715

Date: 6-27-16 Time: 0735

Sample entered by: ESM

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/07/16
Lab ID: 3156-16-0024071

Date Collected: 06/30/16 07:45
Collected By: apm

Date Received: 06/30/16 08:20

Sample Desc: SB-1

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100mL	1	1	SM 9223B	07/01	09:30	RES
Fecal Coliform	3	/100mL	2	1	SM 9222D	06/30	08:55	RES
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/01	09:30	RES

COMMENTS

01 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

02 The total coliform sample was placed in the incubator on 06/30/2016 at 09:15.

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/07/16
 Lab ID: 3156-16-0024072

Date Collected: 06/30/16 07:50
 Collected By: apm

Sample Desc: SB-2

Date Received: 06/30/16 08:20

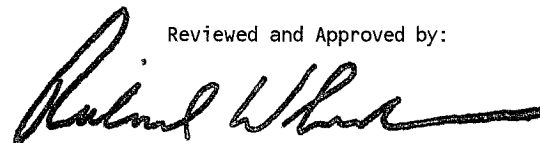
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100mL	1	1	SM 9223B	07/01	09:30	RES
Fecal Coliform	<2	/100mL	2	1	SM 9222D	06/30	08:55	RES
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/01	09:30	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 06/30/2016 at 09:15.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/07/16
Lab ID: 3156-16-0024073

Date Collected: 06/30/16 07:55
Collected By: apm

Date Received: 06/30/16 08:20

Sample Desc: SB-3

PWSID: 3060912

BACTI

MICROBIOLOGY

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	1	mpn/100mL	1	1	SM 9223B	07/01	09:30	RES
Fecal Coliform	<2	/100mL	2	1	SM 9222D	06/30	08:55	RES
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/01	09:30	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 06/30/2016 at 09:15.

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156

Work Order: 006222

Project Leader: rkw

No: 277085

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: ARM

Phone: 703-387-5516 Ext: _____

Samplers: ARM

Sample No: <u>24071</u>	1	Desc: SB-1	Matrix: 0	Date: <u>6/30/16</u>
				Time: <u>0745</u>
			A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
Sample No: <u>24072</u>	2	Desc: SB-2	Matrix: 0	Date: <u>6/30/16</u>
				Time: <u>0750</u>
			A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
Sample No: <u>24073</u>	3	Desc: SB-3	Matrix: 0	Date: <u>6/30/16</u>
				Time: <u>0755</u>
			A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	

Relinquished by: ARM Received by: ARM

Date: 6/30/16 Time: 0800

Date: 6/30/16 Time: 0820

Sample entered by: ARM

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/13/16
Lab ID: 3156-16-0024402

Date Collected: 07/05/16 06:35
Collected By: JBS

Date Received: 07/05/16 07:05

Sample Desc: SB-1

PWSID: 3060912

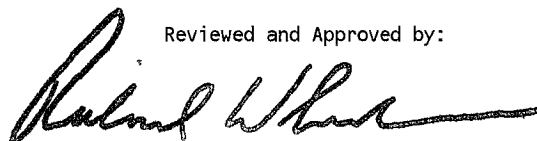
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	8	mpn/100mL	1	1	SM 9223B	07/06	10:00	TNS
Fecal Coliform	11	/100mL	2	1	SM 9222D	07/05	09:15	RES
Total Coliform Bacteria	660	mpn/100mL	1	1	SM 9223B	07/06	10:00	TNS

COMMENTS

01 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/13/16
Lab ID: 3156-16-0024403

Date Collected: 07/05/16 06:40
Collected By: JBS

Sample Desc: SB-2

Date Received: 07/05/16 07:05

PWSID: 3060912

BACTI

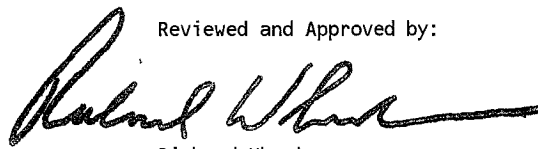
MICROBIOLOGY

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	07/06	10:00	TNS
Fecal Coliform	5	/100mL	2	1	SM 9222D	07/05	09:15	RES
Total Coliform Bacteria	300	mpn/100mL	1	1	SM 9223B	07/06	10:00	TNS

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/13/16
Lab ID: 3156-16-0024404

Date Collected: 07/05/16 06:45
Collected By: JBS

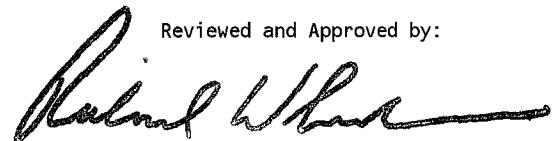
Sample Desc: SB-3

Date Received: 07/05/16 07:05

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	4	mpn/100ml	1	1	SM 9223B	07/06	10:00	TNS
Fecal Coliform	6	/100ml	2	1	SM 9222D	07/05	09:15	RES
Total Coliform Bacteria	500	mpn/100ml	1	1	SM 9223B	07/06	10:00	TNS

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 277157
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: _____

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: DR

=====

Sample No: <u>RES</u> 1	Desc: SB-1
fc, ec, tcb,	
Sample No: <u>RES</u> 2	Desc: SB-2
fc, ec, tcb,	
Sample No: <u>RES</u> 3	Desc: SB-3
fc, ec, tcb,	

=====

Matrix: 0	Date: <u>7-5-16</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0635</u>
Matrix: 0	Date: <u>7-5-16</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0640</u>
Matrix: 0	Date: <u>7-5-16</u>
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0645</u>

Relinquished by: AP Received by: _____

Date: 7-5-16 Time: 0650

Received for laboratory by: _____

Date: 7-5-16 Time: 0705

Sample entered by:



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/13/16
 Lab ID: 3156-16-0024766

Date Collected: 07/07/16 08:25
 Collected By: CLIENT

Sample Desc: SB-1

Date Received: 07/07/16 08:55

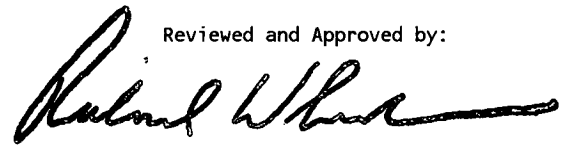
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	07/08	11:05	RES
Fecal Coliform	2	/100ml	2	1	SM 9222D	07/07	09:50	TNS
Total Coliform Bacteria	130	mpn/100ml	1	1	SM 9223B	07/08	11:05	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/07/2016 at 10:00.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/13/16
 Lab ID: 3156-16-0024767

Date Collected: 07/07/16 08:30
 Collected By: CLIENT

Sample Desc: SB-2

Date Received: 07/07/16 08:55

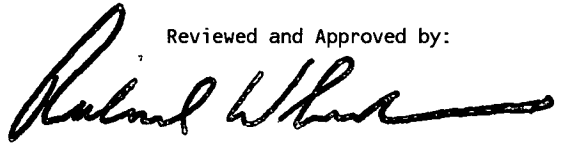
PWSID: 3060912

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100ml	1	1	SM 9223B	07/08	11:05	RES
Fecal Coliform	<2	/100ml	2	1	SM 9222D	07/07	09:50	TNS
Total Coliform Bacteria	110	mpn/100ml	1	1	SM 9223B	07/08	11:05	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/07/2016 at 10:00.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/13/16
 Lab ID: 3156-16-0024768

Date Collected: 07/07/16 08:35
 Collected By: CLIENT

Sample Desc: SB-3

Date Received: 07/07/16 08:55

PWSID: 3060912

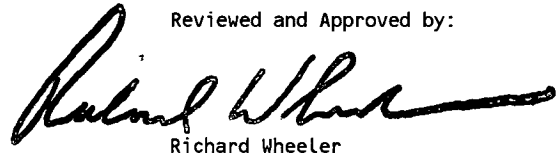
	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100ml	1	1	SM 9223B	07/08	11:05	RES
Fecal Coliform	2	/100ml	2	1	SM 9222D	07/07	09:50	TNS
Total Coliform Bacteria	130	mpn/100ml	1	1	SM 9223B	07/08	11:05	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/07/2016 at 10:00.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

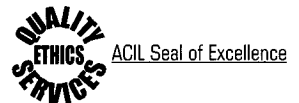
This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



07/07/16 7:04:16 AM

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 277336

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: Arm

Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 10 Deg Arm If Temp Unacceptable, On Ice? Y N
Approved By: _____

Sample No:	Desc:	Matrix:	Date:
<u>24766</u> KES fc, ec, tcb,	1 SB-1	o	<u>7/7/16</u> Time: <u>0835</u>
<u>24767</u> KES fc, ec, tcb,	2 SB-2	o	<u>7/7/16</u> Time: <u>0830</u>
<u>24768</u> KES fc, ec, tcb,	3 SB-3	o	<u>7/7/16</u> Time: <u>0835</u>

Relinquished by: N/R Received by: [Signature]
Date: 7/7/16 Time: 0840
Received for laboratory by: [Signature]
Date: 7/7/16 Time: 0855

Sample entered by: 09M

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/19/16
Lab ID: 3156-16-0025170

Date Collected: 07/11/16 08:20
Collected By: apm

Date Received: 07/11/16 08:55

Sample Desc: SB-1

PWSID: 3060912

BACTI

MICROBIOLOGY

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	07/12	10:35	TNS
Fecal Coliform	6	/100mL	2	1	SM 9222D	07/11	09:43	TNS
Total Coliform Bacteria	1400	mpn/100mL	1	1	SM 9223B	07/12	10:35	TNS

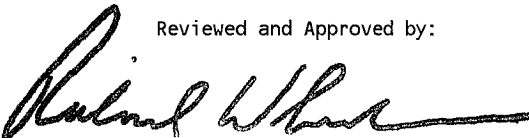
COMMENTS

01 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

02 The total coliform sample was placed in the incubator on 07/11/2016 at 09:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/19/16
Lab ID: 3156-16-0025171

Date Collected: 07/11/16 08:25
Collected By: apm

Sample Desc: SB-2

Date Received: 07/11/16 08:55

PWSID: 3060912

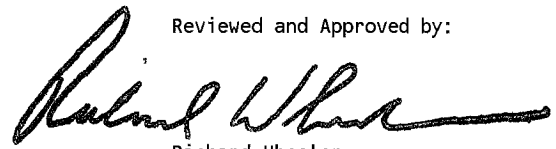
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	07/12	10:35	TNS
Fecal Coliform	3	/100mL	2	1	SM 9222D	07/11	09:43	TNS
Total Coliform Bacteria	820	mpn/100ml	1	1	SM 9223B	07/12	10:35	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/11/2016 at 09:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/19/16
 Lab ID: 3156-16-0025172

Date Collected: 07/11/16 08:30
 Collected By: apm

Sample Desc: SB-3

Date Received: 07/11/16 08:55

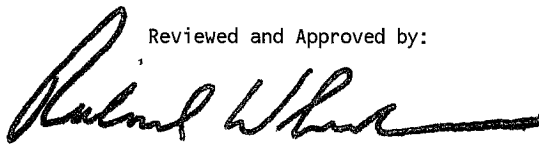
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100mL	1	1	SM 9223B	07/12	10:35	TNS
Fecal Coliform	10	/100mL	2	1	SM 9222D	07/11	09:43	TNS
Total Coliform Bacteria	920	mpn/100mL	1	1	SM 9223B	07/12	10:35	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/11/2016 at 09:45.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 277443
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: ARM

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: _____ Deg C If Temp Unacceptable, On Ice? Y N
Approved By: ARM

Sample No:	1	2	3	Matrix:	Date:	Time:
25170	1	2	3	o	7/11/16	0820
25171	1	2	3	o	7/11/16	0825
25172	1	2	3	o	7/11/16	0830

fc, ec, tcb,
fc, ec, tcb,
fc, ec, tcb,

Relinquished by: NJP Received by: [Signature]
Date: 7/11/16 Time: 0840
Date: 7/11/16 Time: 0855
Received for laboratory by: [Signature]
Date: 7/11/16 Time: 0855
Sample entered by: 09M

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/19/16
Lab ID: 3156-16-0025678
Date Collected: 07/14/16 08:00
Collected By: apm
Date Received: 07/14/16 08:35

Sample Desc: SB-1

PWSID: 3060912

BACTI

MICROBIOLOGY

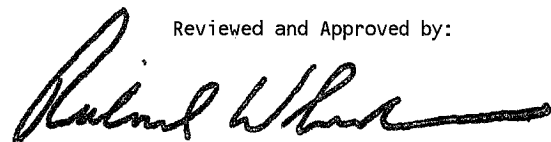
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	1	mpn/100mL	1	1	SM 9223B	07/15	11:30	RES
Fecal Coliform	3	/100mL	2	1	SM 9222D	07/14	10:13	TNS
Total Coliform Bacteria	2400	mpn/100mL	1	1	SM 9223B	07/15	11:30	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/14/2016 at 10:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

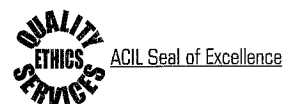

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/19/16
Lab ID: 3156-16-0025679

Date Collected: 07/14/16 08:05
Collected By: apm

Sample Desc: SB-2

Date Received: 07/14/16 08:35

PWSID: 3060912

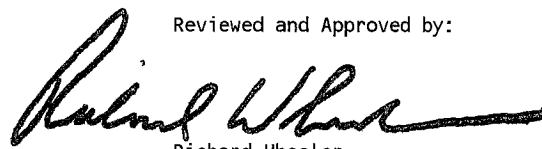
BACTI

MICROBIOLOGY

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
<1	mpn/100ml	1	1	SM 9223B	07/15	11:30	RES
3	/100ml	2	1	SM 9222D	07/14	10:13	TNS
>2400	mpn/100ml	1	1	SM 9223B	07/15	11:30	RES

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/19/16
 Lab ID: 3156-16-0025680
 Date Collected: 07/14/16 08:10
 Collected By: apm
 Date Received: 07/14/16 08:35

Sample Desc: SB-3

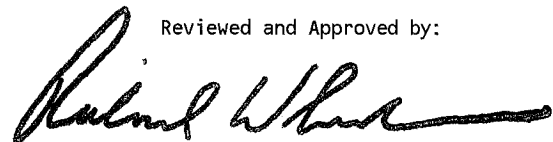
PWSID: 3060912

BACTI

MICROBIOLOGY

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	07/15 11:30	RES
Fecal Coliform	5	/100mL	2	1	SM 9222D	07/14 10:13	TNS
Total Coliform Bacteria	1400	mpn/100mL	1	1	SM 9223B	07/15 11:30	RES

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

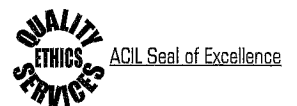
Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 277629
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: Bottle Prep by:

Samplers: APM Laboratory Receipt Temp: 15 Deg C If Temp Unacceptable, On Ice? X N
Approved By: APM

Remarks:

Sample No:	Desc:	Matrix:	Date:
25678 79 79 79	1 SB-1 fc, ec, tcb,	o	7/14/16 0800
25679	2 SB-2 fc, ec, tcb,	o	7/14/16 0805
25680	3 SB-3 fc, ec, tcb,	o	7/14/16 0810

Relinquished by: WJP Received by: [Signature]
Date: 7/14/16 Time: 0820

Received for laboratory by: [Signature]
Date: 7/14/16 Time: 0835

Sample entered by: PM



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/22/16
 Lab ID: 3156-16-0026089

Date Collected: 07/18/16 08:15
 Collected By: apm

Sample Desc: SB-1

Date Received: 07/18/16 08:50

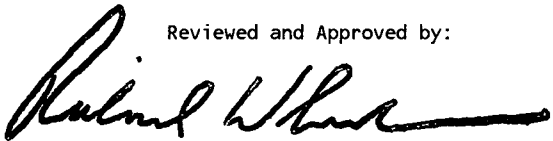
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	20	mpn/100ml	1	1	SM 9223B	07/19	09:30	RES
Fecal Coliform	28	/100mL	2	1	SM 9222D	07/18	09:13	TNS
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	07/19	09:30	RES

COMMENTS

- 01 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.
- 02 The total coliform sample was placed in the incubator on 07/18/2016 at 09:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
 NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/22/16
 Lab ID: 3156-16-0026090

Date Collected: 07/18/16 08:20
 Collected By: apm

Sample Desc: SB-2

Date Received: 07/18/16 08:50

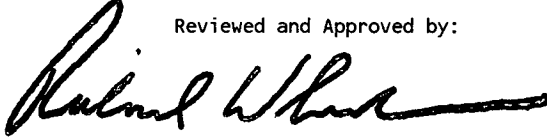
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	07/19	09:30	RES
Fecal Coliform	5	/100ml	2	1	SM 9222D	07/18	09:13	TNS
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	07/19	09:30	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/18/2016 at 09:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/22/16
 Lab ID: 3156-16-0026091

Date Collected: 07/18/16 08:25
 Collected By: apm

Sample Desc: SB-3

Date Received: 07/18/16 08:50

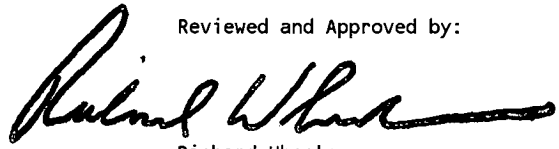
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	07/19	09:30	RES
Fecal Coliform	5	/100ml	2	1	SM 9222D	07/18	09:13	TNS
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	07/19	09:30	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/18/2016 at 09:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

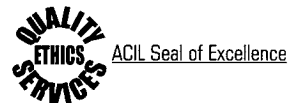
This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156

Work Order: 006222

Project Leader: rxw

No: 277709

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516

Ext: APM

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: APM

- Sample No: 26089 1 Desc: SB-1
fc, ec, tcb,
- Sample No: 26090 2 Desc: SB-2
fc, ec, tcb,
- Sample No: 26091 3 Desc: SB-3
fc, ec, tcb,

- Matrix: 0 Date: 7/18/16
Time: 0815
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;
- Matrix: 0 Date: 7/18/16
Time: 0820
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;
- Matrix: 0 Date: 7/18/16
Time: 0835
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Relinquished by: WJP Received by: [Signature]

Date: 7/18/16 Time: 0835 Received for laboratory by: [Signature]

Date: 7/18/16 Time: 0850

Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/25/16
Lab ID: 3156-16-0026632

Date Collected: 07/21/16 06:35
Collected By: jbs

Sample Desc: SB-1

Date Received: 07/21/16 07:15

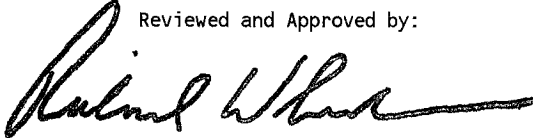
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	07/22	11:20	RES
Fecal Coliform	5	/100ml	2	1	SM 9222D	07/21	09:15	RES
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	07/22	11:20	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/21/2016 at 09:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/25/16
Lab ID: 3156-16-0026633

Date Collected: 07/21/16 06:40
Collected By: jbs

Date Received: 07/21/16 07:15

Sample Desc: SB-2

PWSID: 3060912

BACTI

MICROBIOLOGY

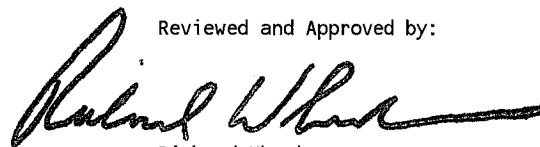
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	<1	mpn/100mL	1	1	SM 9223B	07/22	11:20	RES
Fecal Coliform	5	/100mL	2	1	SM 9222D	07/21	09:15	RES
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/22	11:20	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/21/2016 at 09:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/25/16
 Lab ID: 3156-16-0026634

Date Collected: 07/21/16 06:45
 Collected By: jbs

Sample Desc: SB-3

Date Received: 07/21/16 07:15

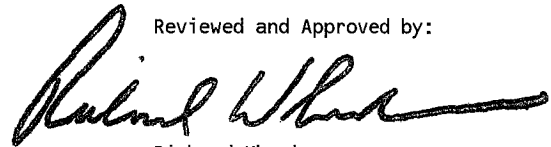
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100mL	1	1	SM 9223B	07/22	11:20	RES
Fecal Coliform	2	/100mL	2	1	SM 9222D	07/21	09:15	RES
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/22	11:20	RES

COMMENTS

01 The total coliform sample was placed in the incubator on 07/21/2016 at 09:30.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 277847
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:
Samplers:
Total Sampling Time (hours): Bottle Prep by:
Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? 0 N
Approved By: JBS

Sample No:	Desc:	Matrix:	Date:	Time:
26632	1 SB-1 fc, ec, tcb,	0	7-21-16	0638
26633	2 SB-2 fc, ec, tcb,	0	7-21-16	0640
26634	3 SB-3 fc, ec, tcb,	0	7-21-16	0645

Relinquished by: [Signature] Received by: [Signature]
 Date: 7-21-16 Time: 0650 Date: 7-21-16 Time: 0715
 Sample entered by: JBS

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/28/16
Lab ID: 3156-16-0026994

Date Collected: 07/25/16 08:15
Collected By: apm

Sample Desc: SB-1

Date Received: 07/25/16 08:50

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	10	mpn/100mL	1	1	SM 9223B	07/26	10:05	TNS
Fecal Coliform	16	/100mL	2	1	SM 9222D	07/25	09:36	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/26	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/25/2016 at 09:40.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 07/28/16
Lab ID: 3156-16-0026995

Date Collected: 07/25/16 08:20
Collected By: apm

Sample Desc: SB-2

Date Received: 07/25/16 08:50

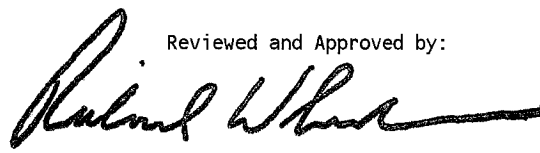
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	13	mpn/100ml	1	1	SM 9223B	07/26	10:05	TNS
Fecal Coliform	58	/100ml	2	1	SM 9222D	07/25	09:36	TNS
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	07/26	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/25/2016 at 09:40.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 07/28/16
 Lab ID: 3156-16-0026996

Date Collected: 07/25/16 08:25
 Collected By: apm

Sample Desc: SB-3

Date Received: 07/25/16 08:50

PWSID: 3060912

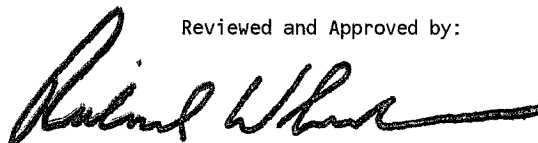
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	13	mpn/100mL	1	1	SM 9223B	07/26	10:05	TNS
Fecal Coliform	13	/100mL	2	1	SM 9222D	07/25	09:36	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	07/26	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/25/2016 at 09:40.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 277934
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: ARM

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice IN
Approved By: ARM

Remarks: _____

Sample No:	1	2	3
26994	26995	26996	
fc, ec, tcb,	fc, ec, tcb,	fc, ec, tcb,	
Desc: SB-1	Desc: SB-2	Desc: SB-3	
Matrix: o	Matrix: o	Matrix: o	
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
Date: <u>7/25/16</u>	Date: <u>7/25/16</u>	Date: <u>7/25/16</u>	
Time: <u>0815</u>	Time: <u>0830</u>	Time: <u>0835</u>	

Relinquished by: N/R Received by: [Signature]
 Date: 7/25/16 Time: 0835 Received for Laboratory by: [Signature]
 Date: 0850 Time: 0850
 Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/04/16
 Lab ID: 3156-16-0027331

Date Collected: 07/28/16 08:00
 Collected By: jbs

Sample Desc: SB-1

Date Received: 07/28/16 08:30

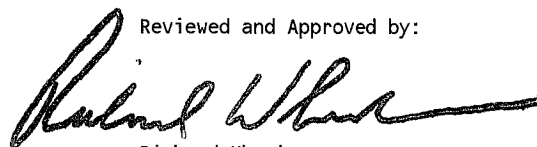
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	7	mpn/100ml	1	1	SM 9223B	07/29	10:50	TNS
Fecal Coliform	10	/100ml	2	1	SM 9222D	07/28	10:18	TNS
Total Coliform Bacteria	2400	mpn/100ml	1	1	SM 9223B	07/29	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/28/2016 at 10:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/04/16
 Lab ID: 3156-16-0027332

Date Collected: 07/28/16 08:05
 Collected By: jbs

Sample Desc: SB-2

Date Received: 07/28/16 08:30

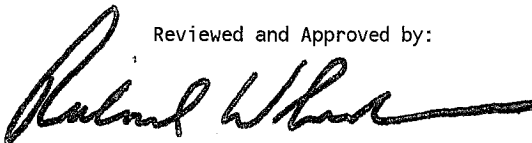
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	11	mpn/100ml	1	1	SM 9223B	07/29	10:50	TNS
Fecal Coliform	11	/100ml	2	1	SM 9222D	07/28	10:18	TNS
Total Coliform Bacteria	1700	mpn/100ml	1	1	SM 9223B	07/29	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/28/2016 at 10:20.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/04/16
Lab ID: 3156-16-0027333

Date Collected: 07/28/16 08:10
Collected By: jbs

Date Received: 07/28/16 08:30

Sample Desc: SB-3

PWSID: 3060912

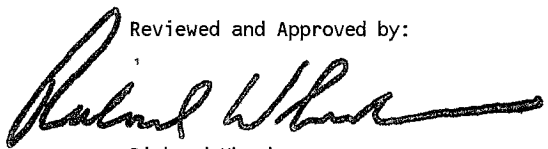
BACTI
MICROBIOLOGY

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	mpn/100ml	1	1	SM 9223B	07/29	10:50	TNS
Fecal Coliform	/100ml	2	1	SM 9222D	07/28	10:18	TNS
Total Coliform Bacteria	mpn/100ml	1	1	SM 9223B	07/29	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 07/28/2016 at 10:20.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278124
 Customer: David Wertz Work Order Description: Beaches 1, 2, 3
 Address: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Phone: 703-387-5516 Ext: JBS
 Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice Y N
 Approved By: JBS

=====

Sample No:	1	2	3	Desc:	SB-1	SB-2	SB-3	Matrix:	o	o	o	Date:	7-28-16	7-28-16	7-28-16	Time:	0830	0830	0810
27331	fc, ec, tcb,							A - 1 X 125ml bact p w/ Sterile/Na2S2O3;											
27332	fc, ec, tcb,							A - 1 X 125ml bact p w/ Sterile/Na2S2O3;											
27333	fc, ec, tcb,							A - 1 X 125ml bact p w/ Sterile/Na2S2O3;											

Relinquished by: NP Received by: [Signature]
 Date: 7-28-16 Time: 0815
 Date: 7-28-16 Time: 0830

Sample entered by: SN

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/04/16
Lab ID: 3156-16-0027681

Date Collected: 08/01/16 07:45
Collected By: apm

Sample Desc: SB-1

Date Received: 08/01/16 08:20

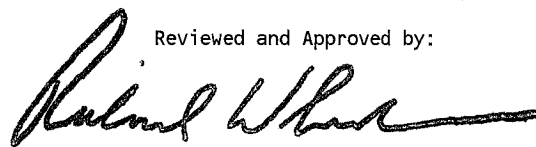
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100mL	1	1	SM 9223B	08/02	10:50	TNS
Fecal Coliform	8	/100mL	2	1	SM 9222D	08/01	09:03	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/02	10:50	TNS

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/01/2016 at 09:15.
- 02 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/04/16
Lab ID: 3156-16-0027682

Date Collected: 08/01/16 07:50
Collected By: apm

Sample Desc: SB-2

Date Received: 08/01/16 08:20

PWSID: 3060912

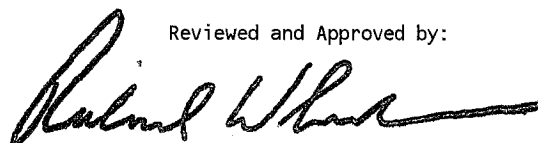
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	4	mpn/100mL	1	1	SM 9223B	08/02	10:50	TNS
Fecal Coliform	5	/100mL	2	1	SM 9222D	08/01	09:03	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/02	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
08/01/2016 at 09:15.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/04/16
Lab ID: 3156-16-0027683

Date Collected: 08/01/16 07:55
Collected By: apm

Sample Desc: SB-3

Date Received: 08/01/16 08:20

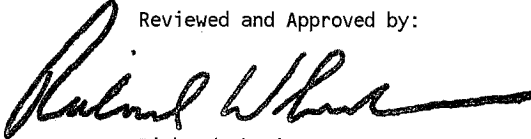
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	10	mpn/100mL	1	1	SM 9223B	08/02	10:50	TNS
Fecal Coliform	13	/100mL	2	1	SM 9222D	08/01	09:03	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/02	10:50	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
08/01/2016 at 09:15.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278189
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: ARM

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 14 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: ARM

Sample No:	Desc:	SB-1
27681	fc, ec, tcb,	
27682	fc, ec, tcb,	
27683	fc, ec, tcb,	

Matrix:	Date:	Time:
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	8/1/16	0745
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	8/1/16	0750
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	8/1/16	0755

Relinquished by: WJP Received by: [Signature]
 Date: 8/1/16 Time: 0805
 Received for laboratory by: [Signature]
 Date: 8/1/16 Time: 0820

Sample entered by: 05M

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/10/16
Lab ID: 3156-16-0028141

Date Collected: 08/04/16 08:13
Collected By: cml

Sample Desc: SB-1

Date Received: 08/04/16 08:45

PWSID: 3060912

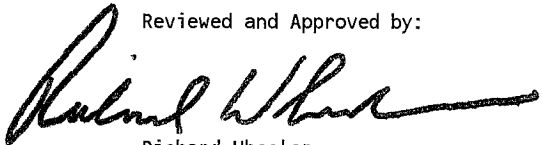
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100mL	1	1	SM 9223B	08/05	12:00	PLW
Fecal Coliform	13	/100mL	2	1	SM 9222D	08/04	10:02	PLW
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/05	12:00	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on
08/04/2016 at 11:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/10/16
Lab ID: 3156-16-0028142

Date Collected: 08/04/16 08:17
Collected By: cml

Sample Desc: SB-2

Date Received: 08/04/16 08:45

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	11	mpn/100ml	1	1	SM 9223B	08/05	12:00	PLW
Fecal Coliform	15	/100ml	2	1	SM 9222D	08/04	10:02	PLW
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	08/05	12:00	PLW

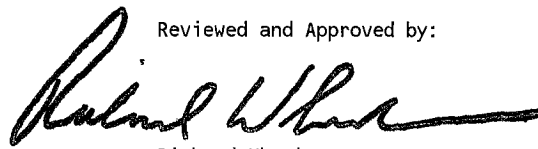
COMMENTS

01 The total coliform sample was placed in the incubator on
08/04/2016 at 11:10.

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:



Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/10/16
Lab ID: 3156-16-0028143

Date Collected: 08/04/16 08:20
Collected By: cml

Sample Desc: SB-3

Date Received: 08/04/16 08:45

PWSID: 3060912

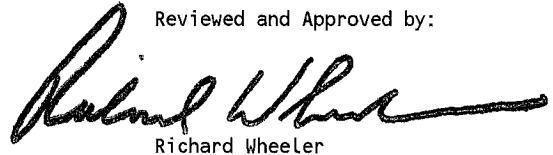
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	7	mpn/100ml	1	1	SM 9223B	08/05	12:00	PLW
Fecal Coliform	15	/100ml	2	1	SM 9222D	08/04	10:02	PLW
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	08/05	12:00	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on 08/04/2016 at 11:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278361
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: _____
Samplers: CML Total Sampling Time (hours): _____ Bottle Prep by: _____
Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: CML

=====

Sample No: 1 Desc: SB-1

fc, ec, tcb, plw

Matrix: 0 Date: 8/4/16
Time: 8:13
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Sample No: 2 Desc: SB-2

fc, ec, tcb, plw

Matrix: 0 Date: 8/4/16
Time: 8:17
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Sample No: 3 Desc: SB-3

fc, ec, tcb, plw

Matrix: 0 Date: 8/4/16
Time: 8:26
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

28141

28142

28143

Relinquished by: [Signature] Received by: [Signature]

Date: 8/4/16 Time: 8:25

Date: 8/4/16 Time: 8:45

Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/11/16
 Lab ID: 3156-16-0028508

Date Collected: 08/08/16 06:45
 Collected By: JBS

Sample Desc: SB-1

Date Received: 08/08/16 07:20

PWSID: 3060912

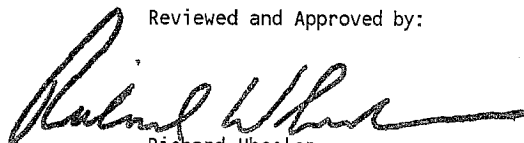
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	8	mpn/100mL	1	1	SM 9223B	08/09	10:05	TNS
Fecal Coliform	31	/100mL	2	1	SM 9222D	08/08	09:08	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/09	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/08/2016 at 09:10.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/11/16
Lab ID: 3156-16-0028509

Date Collected: 08/08/16 06:50
Collected By: JBS

Sample Desc: SB-2

Date Received: 08/08/16 07:20

PWSID: 3060912

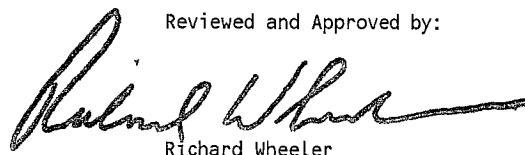
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100mL	1	1	SM 9223B	08/09	10:05	TNS
Fecal Coliform	18	/100mL	2	1	SM 9222D	08/08	09:08	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/09	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
08/08/2016 at 09:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/11/16
 Lab ID: 3156-16-0028510

Date Collected: 08/08/16 06:55
 Collected By: JBS

Sample Desc: SB-3

Date Received: 08/08/16 07:20

PWSID: 3060912

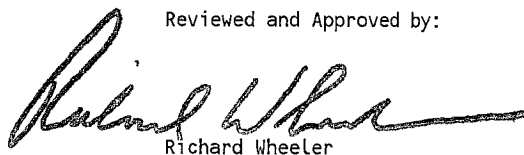
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	26	mpn/100ml	1	1	SM 9223B	08/09	10:05	TNS
Fecal Coliform	44	/100ml	2	1	SM 9222D	08/08	09:08	TNS
Total Coliform Bacteria	>2400	mpn/100ml	1	1	SM 9223B	08/09	10:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/08/2016 at 09:10.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

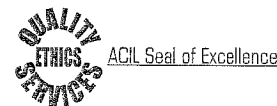

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



jbs
08/08/16 6:05:45 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3156

Work Order: 006222
Work Order Description: Beaches 1, 2, 3

Project Leader: rxw

No: 278449

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201-0000

Remarks:

Phone: 703-387-5516 Ext: JRS

Total Sampling Time (hours):

Bottle Prep by:

Samplers:

Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? (A) N
Approved By: JRS

Sample No: 1 Desc: SB-1

NS
Sample No: 2 Desc: SB-2
fc, ec, tcb,

Sample No: 3 Desc: SB-3
fc, ec, tcb,

Matrix: 0 Date: 8-8-16
Time: 0645

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Matrix: 0 Date: 8-8-16
Time: 0650

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Matrix: 0 Date: 8-8-16
Time: 0657

A - 1 X 125ml bact p w/ Sterile/Na2S2O3;

Relinquished by: AP

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 8-8-16

Time: 0700

Date: 8-8-16

Time: 0720

Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/17/16
Lab ID: 3156-16-0029003

Date Collected: 08/11/16 06:30
Collected By: jbs

Date Received: 08/11/16 07:05

Sample Desc: SB-1

PWSID: 3060912

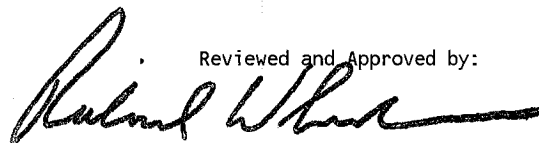
BACTI

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
MICROBIOLOGY								
Escherichia coli	21	mpn/100mL	1	1	SM 9223B	08/12	10:10	TNS
Fecal Coliform	33	/100mL	2	1	SM 9222D	08/11	08:38	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/12	10:10	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/11/2016 at 09:30.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/17/16
 Lab ID: 3156-16-0029004

Date Collected: 08/11/16 06:35
 Collected By: jbs

Sample Desc: SB-2

Date Received: 08/11/16 07:05

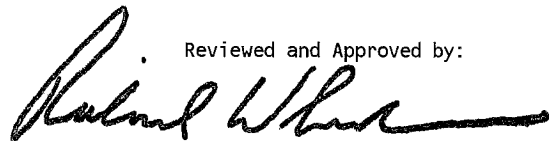
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	17	mpn/100mL	1	1	SM 9223B	08/12	10:10	TNS
Fecal Coliform	40	/100mL	2	1	SM 9222D	08/11	08:38	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/12	10:10	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/11/2016 at 09:30.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/17/16
 Lab ID: 3156-16-0029005

Date Collected: 08/11/16 06:40
 Collected By: jbs

Sample Desc: SB-3

Date Received: 08/11/16 07:05

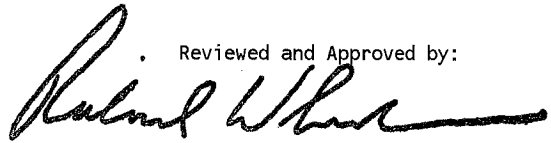
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	47	mpn/100mL	1	1	SM 9223B	08/12	10:10	TNS
Fecal Coliform	120	/100mL	2	1	SM 9222D	08/11	08:38	TNS
Total Coliform Bacteria	>2400	mpn/100mL	1	1	SM 9223B	08/12	10:10	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/11/2016 at 09:30.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278638
 Customer: David Wertz Work Order Description: Beaches 1, 2, 3
 Address: Tetra Tech (Blue Marsh Reservoir) 1320 North Courthouse Rd., Ste.600 Arlington VA 22201-0000
 Phone: 703-387-5516 Ext: JBS
 Samplers: _____

Remarks: _____
 Total Sampling Time (hours): _____ Bottle Prep by: _____
 Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? Y N
 Approved By: JBS

Sample No:	1	2	3
29003	29004	29005	
fc, ec, tcb,	fc, ec, tcb,	fc, ec, tcb,	
Desc: SB-1	Desc: SB-2	Desc: SB-3	
Matrix: 0	Matrix: 0	Matrix: 0	
A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
Date: <u>8-11-16</u>	Date: <u>8-11-16</u>	Date: <u>8-11-16</u>	
Time: <u>0630</u>	Time: <u>0635</u>	Time: <u>0640</u>	

Relinquished by: AW Received for laboratory by: [Signature]
 Date: 8-11-16 Time: 0645 Date: 8-11-16 Time: 0705
 Sample entered by: JGM

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/19/16
Lab ID: 3156-16-0029395

Date Collected: 08/15/16 08:20
Collected By: cml

Sample Desc: SB-1

Date Received: 08/15/16 08:53

PWSID: 3060912

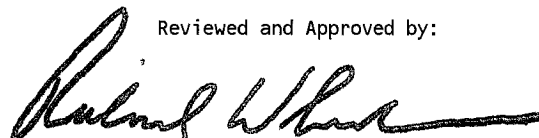
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100ml	1	1	SM 9223B	08/16	10:15	TNS
Fecal Coliform	6	/100ml	2	1	SM 9222D	08/15	10:08	TNS
Total Coliform Bacteria	1400	mpn/100ml	1	1	SM 9223B	08/16	10:15	TNS

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/15/2016 at 10:10.
- 02 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/19/16
Lab ID: 3156-16-0029396

Date Collected: 08/15/16 08:22
Collected By: cml

Sample Desc: SB-2

Date Received: 08/15/16 08:53

PWSID: 3060912

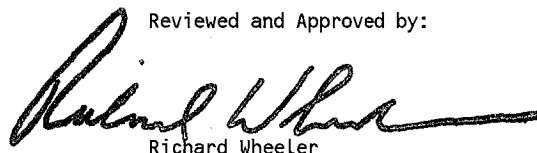
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	96	mpn/100mL	1	1	SM 9223B	08/16	10:15	TNS
Fecal Coliform	98	/100mL	2	1	SM 9222D	08/15	10:08	TNS
Total Coliform Bacteria	1700	mpn/100mL	1	1	SM 9223B	08/16	10:15	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/15/2016 at 10:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/19/16
Lab ID: 3156-16-0029397

Date Collected: 08/15/16 08:25
Collected By: cml

Sample Desc: SB-3

Date Received: 08/15/16 08:53

PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	4	mpn/100mL	1	1	SM 9223B	08/16	10:15	TNS
Fecal Coliform	6	/100mL	2	1	SM 9222D	08/15	10:08	TNS
Total Coliform Bacteria	1200	mpn/100mL	1	1	SM 9223B	08/16	10:15	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/15/2016 at 10:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278717
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: CML

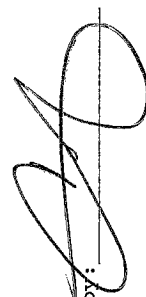
Remarks:

Total Sampling Time (hours): _____ Bottle Prep by: _____
Laboratory Receipt Temp: 7 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: CML

29395	Sample No: 1	Desc: SB-1	Matrix: o	Date: 8/15/16
				Time: 820
			A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
29396	Sample No: 2	Desc: SB-2	Matrix: o	Date: 8/15/16
				Time: 822
			A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
29397	Sample No: 3	Desc: SB-3	Matrix: o	Date: 8/15/16
				Time: 825
			A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	

Relinquished by: N/P Received by: _____
Date: 8/15/16 Time: 831

Received for laboratory by: _____
Date: 8/15/16 Time: 853



Sample entered by: QYM

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/23/16
Lab ID: 3156-16-0029860

Date Collected: 08/18/16 06:30
Collected By: jbs

Sample Desc: SB-1

Date Received: 08/18/16 07:00

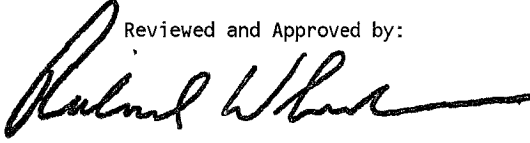
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	260	mpn/100mL	1	1	SM 9223B	08/19	09:30	TNS
Fecal Coliform	290	/100mL	2	1	SM 9222D	08/18	08:03	TNS
Total Coliform Bacteria	1000	mpn/100mL	1	1	SM 9223B	08/19	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/18/2016 at 08:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/23/16
Lab ID: 3156-16-0029861

Date Collected: 08/18/16 06:35
Collected By: jbs

Sample Desc: SB-2

Date Received: 08/18/16 07:00

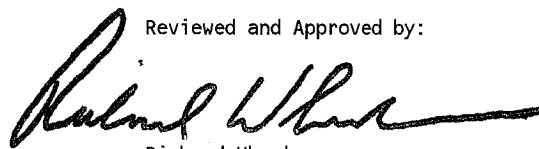
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	64	mpn/100ml	1	1	SM 9223B	08/19	09:30	TNS
Fecal Coliform	120	/100ml	2	1	SM 9222D	08/18	08:03	TNS
Total Coliform Bacteria	870	mpn/100ml	1	1	SM 9223B	08/19	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/18/2016 at 08:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/23/16
Lab ID: 3156-16-0029862

Date Collected: 08/18/16 06:40
Collected By: jbs

Sample Desc: SB-3

Date Received: 08/18/16 07:00

PWSID: 3060912

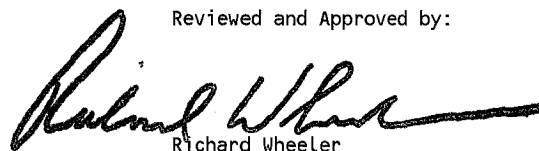
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	220	mpn/100ml	1	1	SM 9223B	08/19	09:30	TNS
Fecal Coliform	270	/100ml	2	1	SM 9222D	08/18	08:03	TNS
Total Coliform Bacteria	870	mpn/100ml	1	1	SM 9223B	08/19	09:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/18/2016 at 08:10.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

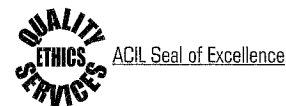

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



jbs
08/18/16 6:00:55 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278879
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: _____

Samplers: DBS

Laboratory Receipt Temp: 14 Deg C If Temp Unacceptable, On Ice? Y N
Approved By: DBS

29860	Sample No: 1	Desc: SB-1	Matrix: o	Date: <u>8-18-16</u>
		fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0630</u>
29861	Sample No: 2	Desc: SB-2	Matrix: o	Date: <u>8-18-16</u>
		fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0635</u>
29862	Sample No: 3	Desc: SB-3	Matrix: o	Date: <u>8-18-16</u>
		fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0640</u>

Total Sampling Time (hours): _____ Bottle Prep by: _____

Relinquished by: NP Received by: _____
Date: 8/18/16 Time: 0645

Received for laboratory by: _____
Date: 8-18-16 Time: 0700

Sample entered by: DM

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/23/16
Lab ID: 3156-16-0030190

Date Collected: 08/20/16 08:50
Collected By: apm

Sample Desc: SB-1

Date Received: 08/20/16 09:20

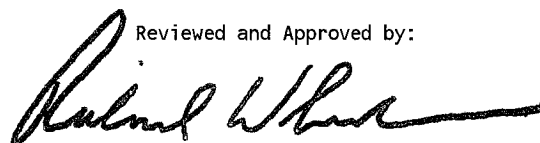
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	34	mpn/100ml	1	1	SM 9223B	08/21	11:30	TNS
Fecal Coliform	62	/100ml	2	1	SM 9222D	08/20	13:30	BSW
Total Coliform Bacteria	1200	mpn/100ml	1	1	SM 9223B	08/21	11:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/20/2016 at 10:50.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/23/16
Lab ID: 3156-16-0030191

Date Collected: 08/20/16 08:55
Collected By: apm

Date Received: 08/20/16 09:20

Sample Desc: SB-2

PWSID: 3060912

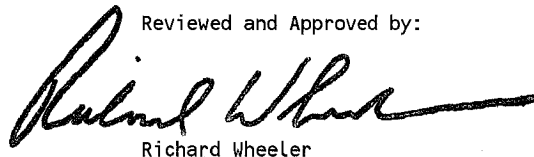
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	6	mpn/100mL	1	1	SM 9223B	08/21	11:30	TNS
Fecal Coliform	11	/100mL	2	1	SM 9222D	08/20	13:30	BSW
Total Coliform Bacteria	200	mpn/100mL	1	1	SM 9223B	08/21	11:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/20/2016 at 10:50.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/23/16
 Lab ID: 3156-16-0030192

Date Collected: 08/20/16 09:00
 Collected By: apm

Sample Desc: SB-3

Date Received: 08/20/16 09:20

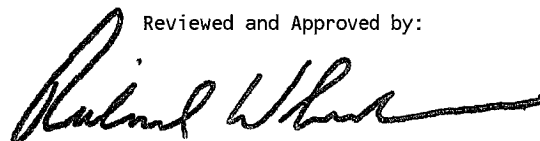
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	3	mpn/100mL	1	1	SM 9223B	08/21	11:30	TNS
Fecal Coliform	5	/100mL	2	1	SM 9222D	08/20	13:30	BSW
Total Coliform Bacteria	220	mpn/100mL	1	1	SM 9223B	08/21	11:30	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/20/2016 at 10:50.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278925
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext:

Samplers: ARM

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C 15 Temp Unacceptable, On Ice? Y
Approved By: ARM

Sample No:	Desc:	Matrix:	Date:	Time:
30190	1 SB-1 fc, ec, tcb,	o	8/20/16	0850
30191	2 SB-2 fc, ec, tcb,	o	8/20/16	0855
30192	3 SB-3 fc, ec, tcb,	o	8/20/16	0900

Relinquished by: W/P Received by: [Signature]
 Date: 8/20/16 Time: 0905 Date: 8/20/16 Time: 0920

Sample entered by: oym

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030221

Date Collected: 08/22/16 06:35
Collected By: jbs

Sample Desc: SB-1

Date Received: 08/22/16 07:15

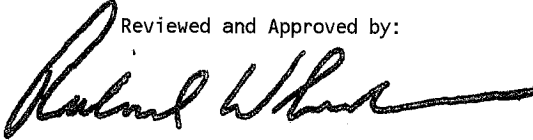
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	10	mpn/100mL	1	1	SM 9223B	08/23	10:45	TNS
Fecal Coliform	56	/100mL	2	1	SM 9222D	08/22	09:33	TNS
Total Coliform Bacteria	2400	mpn/100mL	1	1	SM 9223B	08/23	10:45	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/22/2016 at 09:15.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030222

Date Collected: 08/22/16 06:40
Collected By: jbs

Sample Desc: SB-2

Date Received: 08/22/16 07:15

PWSID: 3060912

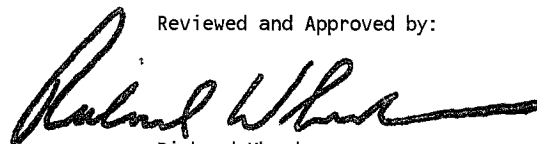
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	220	mpn/100ml	1	1	SM 9223B	08/23	10:45	TNS
Fecal Coliform	240	/100ml	2	1	SM 9222D	08/22	09:33	TNS
Total Coliform Bacteria	2400	mpn/100ml	1	1	SM 9223B	08/23	10:45	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on 08/22/2016 at 09:15.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030223

Date Collected: 08/22/16 06:45
Collected By: jbs

Sample Desc: SB-3

Date Received: 08/22/16 07:15

PWSID: 3060912

BACTI

MICROBIOLOGY

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	mpn/100ml	1	1	SM 9223B	08/23	10:45	TNS
Fecal Coliform	/100ml	2	1	SM 9222D	08/22	09:33	TNS
Total Coliform Bacteria	mpn/100ml	1	1	SM 9223B	08/23	10:45	TNS

Distribution of Reports:

Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Jbs
08/22/16 6:00:30 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 278941
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: JBS

Samplers: _____

Remarks: _____

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice C N
Approved By: JBS

=====

30221	Sample No: 1	Desc: SB-1	Matrix: 0	Date: 8-22-16
	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: 0635
30222	Sample No: 2	Desc: SB-2	Matrix: 0	Date: 8-22-16
	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: 0640
30223	Sample No: 3	Desc: SB-3	Matrix: 0	Date: 8-22-16
	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: 0645

=====

Relinquished by: JUP Received by: _____
Date: 8-22-16 Time: 0655

Received for laboratory by: _____
Date: 8-27-16 Time: 0715

Sample entered by: pgm

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030487

Date Collected: 08/24/16 08:00
Collected By: jbs

Sample Desc: SB-1

Date Received: 08/24/16 08:35

PWSID: 3060912

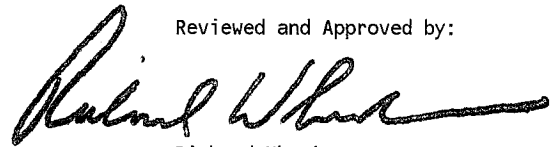
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	73	mpn/100ml	1	1	SM 9223B	08/25	11:20	PLW
Fecal Coliform	78	/100ml	2	1	SM 9222D	08/24	12:30	PLW
Total Coliform Bacteria	820	mpn/100ml	1	1	SM 9223B	08/25	11:20	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on
08/24/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

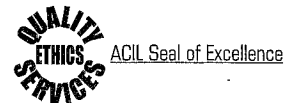

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030488

Date Collected: 08/24/16 08:05
Collected By: jbs

Sample Desc: SB-2

Date Received: 08/24/16 08:35

PWSID: 3060912

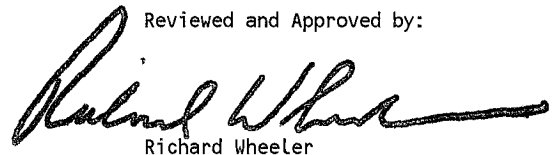
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	180	mpn/100ml	1	1	SM 9223B	08/25	11:20	PLW
Fecal Coliform	300	/100ml	2	1	SM 9222D	08/24	12:30	PLW
Total Coliform Bacteria	1300	mpn/100ml	1	1	SM 9223B	08/25	11:20	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on 08/24/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030489

Date Collected: 08/24/16 08:10
Collected By: jbs

Sample Desc: SB-3

Date Received: 08/24/16 08:35

PWSID: 3060912

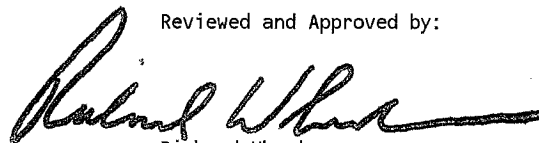
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	220	mpn/100ml	1	1	SM 9223B	08/25	11:20	PLW
Fecal Coliform	840	/100ml	2	1	SM 9222D	08/24	12:30	PLW
Total Coliform Bacteria	2400	mpn/100ml	1	1	SM 9223B	08/25	11:20	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on 08/24/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



jbs
08/24/16 6:36:41 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 279080
Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: JBS

Samplers: JBS

Remarks: Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: M Deg C. If Temp Unacceptable, On Ice Y N
Approved By: JBS

Sample No:	Desc:	SB-1	Matrix:	o	Date:	Time:
30487	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		8-24-16	0800
30488	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		8-24-16	0805
30489	fc, ec, tcb,		A - 1 X 125ml bact p w/ Sterile/Na2S2O3;		8-24-16	0810

Relinquished by: JSP Received by: [Signature]

Date: 8-24-16 Time: 0815

Date: 8-24-16 Time: 0835

Sample entered by: 09M

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 08/30/16
 Lab ID: 3156-16-0030641

Date Collected: 08/25/16 06:30
 Collected By: jbs

Sample Desc: SB-1

Date Received: 08/25/16 07:05

PWSID: 3060912

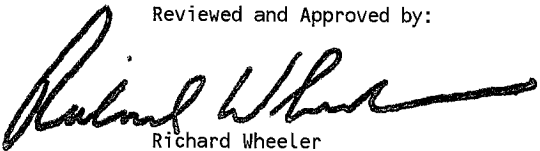
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	34	mpn/100mL	1	1	SM 9223B	08/26	11:00	PLW
Fecal Coliform	66	/100mL	2	1	SM 9222D	08/25	09:12	PLW
Total Coliform Bacteria	550	mpn/100mL	1	1	SM 9223B	08/26	11:00	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on 08/25/2016 at 17:00.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
 PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030642

Date Collected: 08/25/16 06:35
Collected By: jbs

Date Received: 08/25/16 07:05

Sample Desc: SB-2

PWSID: 3060912

BACTI

MICROBIOLOGY

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	52	mpn/100ml	1	1	SM 9223B	08/26 11:00	PLW
Fecal Coliform	96	/100ml	2	1	SM 9222D	08/25 09:12	PLW
Total Coliform Bacteria	460	mpn/100ml	1	1	SM 9223B	08/26 11:00	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on 08/25/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 08/30/16
Lab ID: 3156-16-0030643
Date Collected: 08/25/16 06:40
Collected By: jbs
Date Received: 08/25/16 07:05

Sample Desc: SB-3

PWSID: 3060912

BACTI

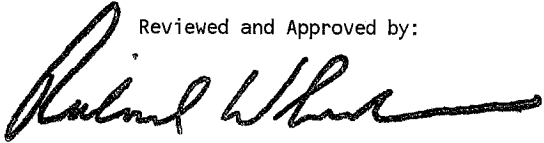
MICROBIOLOGY

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	32	mpn/100mL	1	1	SM 9223B	08/26	11:00	PLW
Fecal Coliform	72	/100mL	2	1	SM 9222D	08/25	09:12	PLW
Total Coliform Bacteria	550	mpn/100mL	1	1	SM 9223B	08/26	11:00	PLW

COMMENTS

01 The total coliform sample was placed in the incubator on 08/25/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



ACIL Seal of Excellence

Chain of Custody

Account: 3156 Work Order: 006222 Project Leader: rxw No: 279124
Customer: David Wertz Work Order Description: Beaches 1, 2, 3

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: 713

Samplers: _____

Remarks: _____
Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: B Deg C. If Temp Unacceptable, On Ice O N
Approved By: JBS

Sample No: 1	Desc: SB-1	Matrix: o	Date: 8-25-16
fc, ec, tcb,			Time: 0630
Sample No: 2	Desc: SB-2	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
fc, ec, tcb,		Matrix: o	Date: 8-25-16
Sample No: 3	Desc: SB-3	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	
fc, ec, tcb,		Matrix: o	Date: 8-25-16
			Time: 0640
			Date: 8-25-16
			Time: 0640

30641
30642
30643

Relinquished by: AW Received by: [Signature]
Date: 8-25-16 Time: 0645
Date: 8-25-16 Time: 1005

Sample entered by: AW

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/01/16
Lab ID: 3156-16-0031022

Date Collected: 08/29/16 07:44
Collected By: raq

Sample Desc: SB-1

Date Received: 08/29/16 08:19

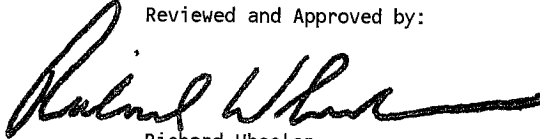
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	17	mpn/100ml	1	1	SM 9223B	08/30	09:35	TNS
Fecal Coliform	100	/100ml	2	1	SM 9222D	08/29	08:48	TNS
Total Coliform Bacteria	2400	mpn/100ml	1	1	SM 9223B	08/30	09:35	TNS

COMMENTS

- 01 The total colifrom sample was placed in the incubator on 08/29/2016 at 08:45.
- 02 Duplicate analysis of this sample for fecal coliform was outside the acceptable limit of 20%RPD.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/01/16
Lab ID: 3156-16-0031023

Date Collected: 08/29/16 07:46
Collected By: raq

Sample Desc: SB-2

Date Received: 08/29/16 08:19

PWSID: 3060912

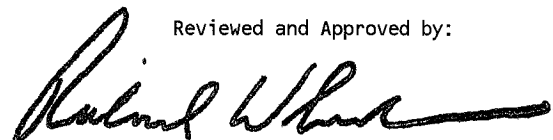
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	28	mpn/100ml	1	1	SM 9223B	08/30	09:35	TNS
Fecal Coliform	120	/100ml	2	1	SM 9222D	08/29	08:48	TNS
Total Coliform Bacteria	2000	mpn/100ml	1	1	SM 9223B	08/30	09:35	TNS

COMMENTS

01 The total colifrom sample was placed in the incubator on 08/29/2016 at 08:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/01/16
Lab ID: 3156-16-0031024

Date Collected: 08/29/16 07:48
Collected By: raq

Sample Desc: SB-3

Date Received: 08/29/16 08:19

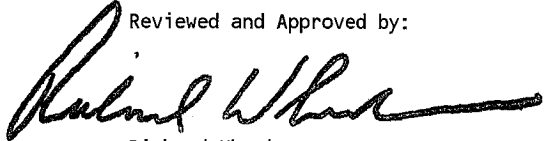
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	80	mpn/100ml	1	1	SM 9223B	08/30	09:35	TNS
Fecal Coliform	340	/100ml	2	1	SM 9222D	08/29	08:48	TNS
Total Coliform Bacteria	1700	mpn/100ml	1	1	SM 9223B	08/30	09:35	TNS

COMMENTS

01 The total colifrom sample was placed in the incubator on 08/29/2016 at 08:45.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



Chain of Custody

Account: 3156

Work Order: 006222

Project Leader: rxw

No: 279203

Work Order Description: Beaches 1, 2, 3

Customer: David Wertz

Remarks:

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Total Sampling Time (hours): _____ Bottle Prep by: _____

Phone: 703-387-5516 Ext: _____

Samplers: _____

Laboratory Receipt Temp: 17 Deg C If Temp Unacceptable, On Ice RAE
Approved By: _____

Sample No:	Desc:	Matrix:	Date:	Time:
31022	1 SB-1 fc, ec, tcb,	o	8/29/16	744
31023	2 SB-2 fc, ec, tcb,	o	8/29/16	746
31024	3 SB-3 fc, ec, tcb,	o	8/29/16	748

Relinquished by: rxw Received by: [Signature]
 Date: 8/29/16 Time: 7:55
 Date: 8/29/16 Time: 8:19
 Sample entered by: 899

CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/08/16
Lab ID: 3156-16-0031443

Date Collected: 09/01/16 06:30
Collected By: jbs

Sample Desc: SB-1

Date Received: 09/01/16 07:10

PWSID: 3060912

BACTI

MICROBIOLOGY

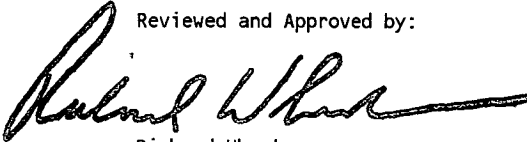
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	170	mpn/100mL	1	1	SM 9223B	09/02	11:05	TNS
Fecal Coliform	200	/100mL	2	1	SM 9222D	09/01	14:30	TNS
Total Coliform Bacteria	1200	mpn/100mL	1	1	SM 9223B	09/02	11:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
09/01/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:


Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Date of Report: 09/08/16
Lab ID: 3156-16-0031444

Date Collected: 09/01/16 06:35
Collected By: jbs

Sample Desc: SB-2

Date Received: 09/01/16 07:10

PWSID: 3060912

BACTI

MICROBIOLOGY

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
Escherichia coli	190	mpn/100ml	1	1	SM 9223B	09/02	11:05	TNS
Fecal Coliform	200	/100ml	2	1	SM 9222D	09/01	14:30	TNS
Total Coliform Bacteria	870	mpn/100ml	1	1	SM 9223B	09/02	11:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
09/01/2016 at 17:00.

Distribution of Reports:
Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

Richard Wheeler

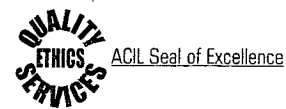
This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.





CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.



Attention: David Wertz
 Reported To: Tetra Tech (Blue Marsh Reservoir)
 1320 North Courthouse Rd., Ste.600
 Arlington VA 22201-0000

Date of Report: 09/08/16
 Lab ID: 3156-16-0031445

Date Collected: 09/01/16 06:40
 Collected By: jbs

Sample Desc: SB-3

Date Received: 09/01/16 07:10

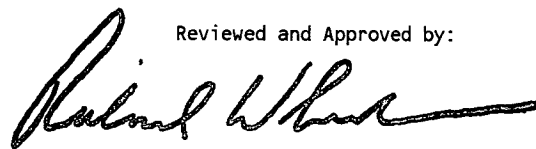
PWSID: 3060912

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	70	mpn/100ml	1	1	SM 9223B	09/02	11:05	TNS
Fecal Coliform	110	/100ml	2	1	SM 9222D	09/01	14:30	TNS
Total Coliform Bacteria	460	mpn/100ml	1	1	SM 9223B	09/02	11:05	TNS

COMMENTS

01 The total coliform sample was placed in the incubator on
 09/01/2016 at 17:00.

Distribution of Reports:
 Gregory Wacik - USACE (Blue Marsh Reservoir)

Reviewed and Approved by:

 Richard Wheeler

This certificate shall not be reproduced except in full without the written approval of M.J. Reider Associates, Inc.



ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611

PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com

NELAP accredited by PA. (PADEP #06-00003) (NYSDOH11630) Visit our website to view our current
 NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.



M. J. REIDER ASSOCIATES, INC.

09/01/16 5:59:22 AM

Chain of Custody

Account: 3156
Customer: David Wertz

Work Order: 006222
Work Order Description: Beaches 1, 2, 3

Project Leader: rxw
No: 279331

Address: Tetra Tech (Blue Marsh Reservoir)
1320 North Courthouse Rd., Ste.600
Arlington VA 22201-0000

Phone: 703-387-5516 Ext: TBS

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 15 Deg C. If Temp Unacceptable, On Ice? Y
Approved By: TBS

Sample No: 1	Desc: SB-1	Matrix: o	Date: <u>9-1-16</u>
<u>TNS</u>	fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0630</u>
Sample No: 2	Desc: SB-2	Matrix: o	Date: <u>9-1-16</u>
<u>31444</u>	fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0635</u>
Sample No: 3	Desc: SB-3	Matrix: o	Date: <u>9-1-16</u>
<u>31445</u>	fc, ec, tcb,	A - 1 X 125ml bact p w/ Sterile/Na2S2O3;	Time: <u>0640</u>

Relinquished by: NP

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 9-1-16

Time: 0645

Date: 9-1-16

Time: 0710

Sample entered by: RGM