2015 WATER QUALITY MONITORING BELTZVILLE RESERVOIR LEHIGHTON, PENNSYLVANIA



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

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1.0 INTRODUCTION

1.1 PURPOSE OF THE MONITORING PROGRAM

The U.S. Army Corps of Engineers (USACE) manages Beltzville Reservoir located in east-central Pennsylvania within the Delaware River Basin. Beltzville Reservoir provides flood control and a dependable water supply to downstream communities along the Pohopoco Creek and Lehigh River. 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 Beltzville Reservoir serves, the USACE monitors water quality to compare with state water quality standards and to diagnose other problems that commonly effect reservoir health such as nutrient enrichment and toxic loadings. This report summarizes the results of water quality monitoring at Beltzville Reservoir from 04 June to 31 August 2015.

1.2 DESCRIPTION OF BELTZVILLE RESERVOIR

Beltzville Reservoir was designed to provide flood control, water supply, and enhanced water quality to downstream communities along the Lehigh River. The damming of Pohopoco Creek approximately three miles upstream of its confluence with the Lehigh River formed the reservoir. The reservoir is located in Carbon County, 3 miles northeast of Lehighton and about 20 miles northwest of Allentown, Pennsylvania. The reservoir dams a drainage area of 96.3 square miles and can impound up to 13 billion gallons of water. The primary water source feeding into the lake is Pohopoco creek as it flows southwest to the Lehigh River. Secondary water sources include Pine Run and Wild Creek, both entering the reservoir from the north. The reservoir is approximately 7 miles long and, when full, covers an area of 947 acres. The maximum depth of the lake is 140 feet near the face of the dam.

1.3 ELEMENTS OF THE STUDY

The USACE, Philadelphia District, has been monitoring the water quality of Beltzville Reservoir since 1975. Over this time, the yearly monitoring designs have evolved to address new concerns such as the health of public drinking water and contamination of reservoir bottom sediments. The 2015 monitoring program included the following major elements:

- Monthly water quality and bacteria surface water 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 04 June and ending on 31 August 2015; and
- Monthly profile samples for temperature, dissolved oxygen, chlorophyll a, pH, turbidity, and conductivity at all stations in the reservoir and watershed.

2.0 METHODS

2.1 STRATIFICATION MONITORING

Physical stratification monitoring of the water column was conducted five times at Beltzville Reservoir between 04 June and 31 August 2015 (Table 2-1). Physical stratification parameters included depth, temperature, dissolved oxygen (DO), pH, turbidity, chlorophyll a, and conductivity. Physical stratification was monitored at seven fixed stations throughout the reservoir watershed (Fig. 2-1). Three stations were located within the reservoir body (BZ-3, BZ-6, and BZ-7) for which water quality was measured from the surface to the bottom at 5-foot intervals. Surface water quality was measured at four stations, located on upstream source waters (BZ-2S on Pine Run, BZ-4S on Wild Creek, and BZ-5S on Pohopoco Creek) and BZ-1S downstream of the reservoir on Pohopoco Creek. The physical water quality parameters were measured with a calibrated YSI 6600 V2-4 water quality probe. For this report, all of the stratification monitoring results were summarized and compared to water quality standards enacted by the Pennsylvania Department of Environmental Protection (PADEP), where applicable.

2.2 WATER COLUMN CHEMISTRY MONITORING

Water column chemistry monitoring was conducted five times (once a month) at Beltzville Reservoir between 04 June and 31 August 2015 (Table 2-1). Water samples were collected at the seven fixed stations in the reservoir watershed (Fig. 2-1). Surface water samples were collected downstream of the reservoir (BZ-1S) and on upstream tributary sources Pine Run (BZ-2S), Wild Creek (BZ-4S), and Pohopoco Creek (BZ-5S). Surface, middle, and bottom water samples were collected at three reservoir stations (BZ-3, BZ-6, and BZ-7). Surface water samples were collected by opening sample containers approximately 1 foot below the water's surface. Middle and bottom water samples were collected with a Van Dorn design horizontal water bottle. MJ Reider Associates in Reading, Pennsylvania conducted the laboratory water sample analysis for 2015.

Water samples from all depths were analyzed for ammonia, nitrite, nitrate, total Kjeldahl nitrogen, total phosphorus, ortho-phosphate, soluble phosphorus, total dissolved solids, total suspended solids, biochemical oxygen demand, alkalinity, and total organic carbon. Table 2-2 summarizes the laboratory method detection limits, laboratory/Corps required reporting limits, state regulatory criteria, and allowable maximum hold times for each water quality parameter monitored.

Date of Sample Collection	Physical Stratification Monitoring (All Stations)	Water Column Chemistry Monitoring (All Stations)	BTEX Monitoring ⁽²⁾ (BZ-3 and -6)	Trophic State Assessment (BZ-6)	Coliform Bacteria Monitoring (All Surface Stations)	Drinking Water Monitoring ⁽¹⁾
04 June	X	х		Х	Х	
01 July	Х	х		Х	Х	
23 July	Х	х		Х	Х	
13 August	Х	х		Х	Х	
31 August	Х	х		Х	Х	
eservoir water	quality sampling	report.	-		data has not been ind able levels of these p	

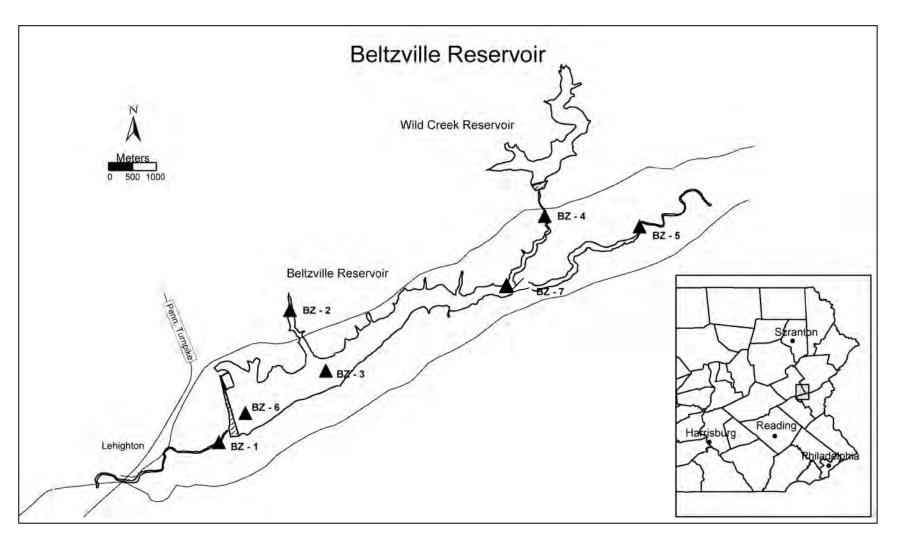


Figure 2-1. Beltzville Reservoir and the location of water quality monitoring stations in 2015.

			, state regulatory c monitored at Beltzv	
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	SM-20 4500-PE	0.05 mg/L	None	28
Total Organic Carbon (TOC)	SM-20 5310C	1.0 mg/L	None	28
Total Inorganic Carbon (TIC) *	SM-20 5310B	NA	None	28
Total Carbon (TOC + TIC) *	SM-20 5310B	NA	None	28
(1) Chlorophyll a	YSI Probe		None	In Sltu
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	28
Nitrite	MCAWW 353.2	0.05 mg/L	10 mg/L (nitrate + nitrite)	28
Total Dissolved Solids	SM20 5.0		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,

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

* Total Inorganic Carbon and Total Carbon were not sampled for in 2015

2.3 TROPHIC STATE DETERMINATION

The trophic state of Beltzville Reservoir was determined by methods outlined by Carlson (1977). In general, this method 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 used independently in the determination of monthly trophic state (Table 2-1). Secchi disk depth was measured monthly at reservoir-body station BZ-6. Trophic state determinations were made using criteria defined by Carlson and EPA (1983) and calculated only for Station BZ-6 within the deepest portion of the reservoir.

2.4 RESERVOIR BACTERIA MONITORING

Monitoring for coliform bacteria contaminants was conducted five times at Beltzville Reservoir between 04 June and 31 August 2015 (Table 2-1). Surface water samples were collected at all seven stations and analyzed for total coliform and fecal coliform. The samples were collected in the same manner as the chemistry samples or approximately 1-foot below the surface of the water. Table 2-3 presents the test methods, detection limits, PADEP standards, and sample holding times for the bacteria parameters monitored at Beltzville Reservoir in 2015. The bacteria analytical method was based on a membrane filtration technique. All of the samples were analyzed within their maximum allowable hold times.

Table 2-3.Water quality test methods, detection limits, PADEP standards, and sample holding times for bacteria parameters monitored at Beltzville Reservoir in 2015.												
Parameter	Fecal Coliform											
Test method	SM 9223B	SM9222D										
Detection limit	1 clns/100-mls	2 clns/100-mls										
PADEP standard	None	Geometric mean < 200 clns/100-mls or a single sample reading of < 1000 clns/100-mls										
Maximum allowable holding time	g 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. Beltzville State Park maintains a bathing beach at Beltzville Reservoir and conducts bacteria sampling of that area. Given our logistical limitations (all monthly sampling conducted on one day) and the fact that water contact recreation is permitted within the reservoir, the 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 Beltzville Reservoir bacteria levels within the main reservoir body.

3.0 RESULTS AND DISCUSSION

3.1 STRATIFICATION MONITORING

The following sections summarize the water quality monitoring results of the 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 lake water column based on measures from the deepest portion of the reservoir (station BZ-6 or the "Tower") are described. The discussion of stratification is focused on this station as water quality problems related to depth are generally most severe in deeper water habitats. Corps personnel collected the physical and chemical water quality data discussed herein over the monitoring period from June to August 2015. 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.

Temperatures of the tributary and downstream release surface waters generally followed a similar seasonal pattern throughout the watershed of Beltzville Reservoir during 2015 (Fig. 3-1). The maximum upstream tributary station temperature of 24.00 °C was seen at station BZ-4S on 23 July. The maximum downstream release (BZ-1S) surface water temperature was 17.83 °C on 31 August. Upstream and downstream waters have a variety of environmental and anthropogenic factors potentially influencing water temperature. Station BZ-1S is directly influenced by Beltzville Reservoir releases that come from various locations in the water column and is dictated by reservoir release operations. Downstream release temperatures are managed to meet Pennsylvania State High Quality Cold Water Fishery standards. Station BZ-2S is a small well vegetated cold water tributary. Station BZ-4S is influenced by Wild Creek Reservoir releases upstream of Beltzville Reservoir and maintained the highest recorded tributary surface water temperatures throughout the sampling season. Station BZ-5S is located in an open water area were Pohopoco Creek enters Beltzville Reservoir. These factors, amongst others, likely result in the temperature variations in surface water temperatures at each tributary station shown in Figure 3.1.

Beltzville Reservoir was stratified with respect to temperature in 2015 (Fig. 3-2). The reservoir surface waters are warmed by the sun and account for warmer surface water temperatures recorded at lake stations (BZ-3, BZ-7, and BZ-6). In June, stratification was apparent with surface temperatures (20.08 °C) approximately 14.39 °C warmer than the lower water column (5.69 °C). A strong stratification pattern was evident from early June into late August. In late August, cooling surface temperatures and erosion of the epiliminion marked the onset of fall turnover within the reservoir.

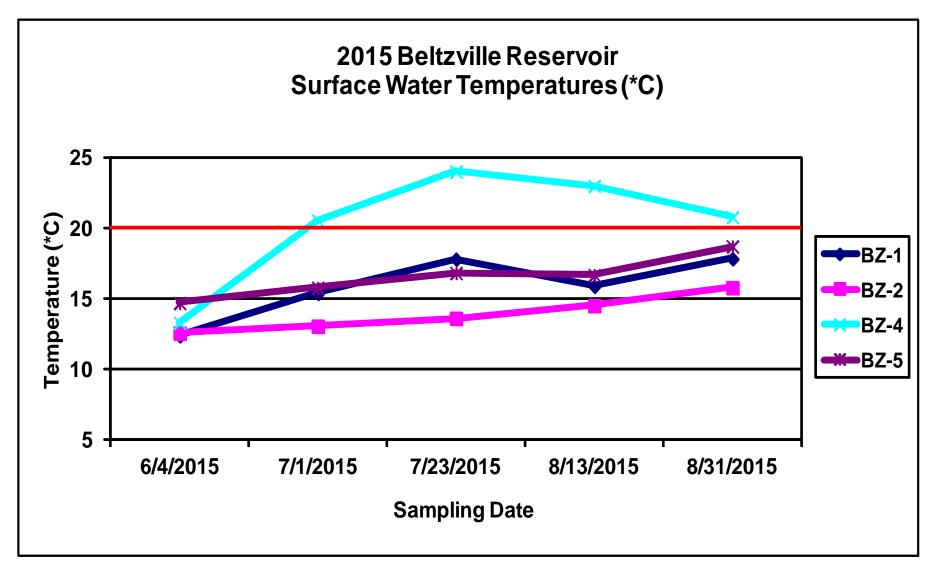


Figure 3-1. Tributary and downstream surface water temperature (°C) measured at Beltzville Reservoir in 2015. See Appendix A for Summary of plotted values. Station BZ-1 reflects releases surface water temperatures downstream of Beltzville Reservoir.

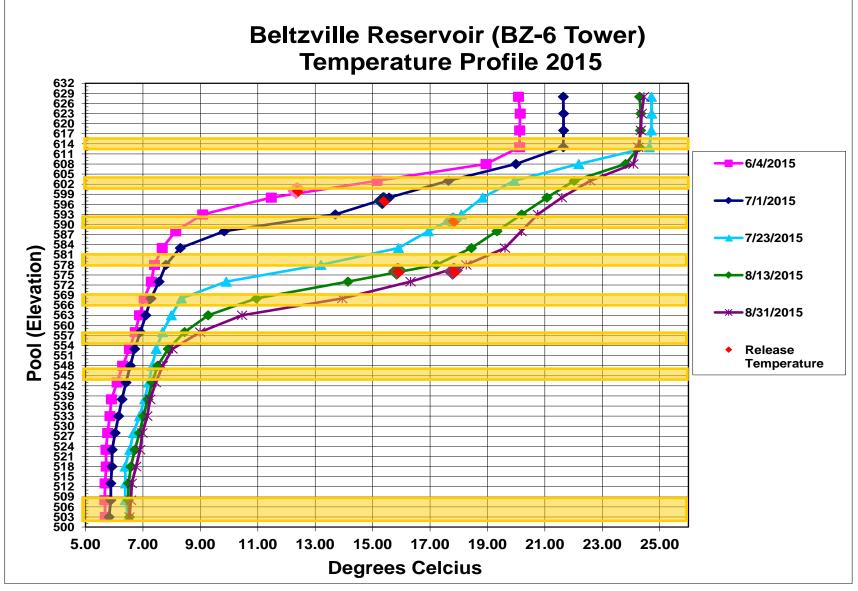


Figure 3-2. Lake temperature profile at station BZ-6 of Beltzville Reservoir in 2015. See Appendix A for summary of plotted values. The yellow bars represent the locations of water control gates in the Beltzville Reservoir control tower.

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 air and water 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 dissolved oxygen can facilitate the release of nutrients from bottom sediments.

Dissolved oxygen (DO) in the tributary and release surface waters remained within an 8-11 mg/L range of values and generally followed a similar seasonal pattern throughout the watershed of Beltzville Reservoir during 2015 (Fig. 3-3). Dissolved oxygen concentrations downstream of the reservoir (BZ-1S) and at the upstream tributary stations (BZ-2S, -4S, -5S) averaged 9.55 mg/L for the sampling season. The maximum DO reading of 10.7 mg/L occurred at BZ-1S on 31 August and a minimum reading of 8.22 mg/L occurred at BZ-4S on 23 July.

Dissolved Oxygen in the water column at station BZ-6 of Beltzville Reservoir from early July through late August, exhibited a metalimnetic oxygen minimum (negative heterograde curve) with concentrations decreasing and increasing rapidly as measurements were taken from the surface to the lake bottom (Fig. 3-4). This general pattern has been observed at station BZ-6 in previous years and may be due to a lens of low oxygenated water passing through the reservoir from upstream sources, a result of portal operations at the reservoir tower, respiratory oxygen consumption or some other factor or combination of factors.

DO concentrations in the water column of Beltzville Reservoir were in compliance with PADEP water quality standards during 2015. The state water quality standard for DO is a minimum concentration of 5-mg/L in the epilimnion of stratified lakes. As shown in Figure 3-4, concentrations falling below the standard were encountered in early and late August, but were located below the epilimnion. DO concentrations measured in all surface waters of the reservoir were in compliance with the standard.

The health of aquatic ecosystems is impaired by low DO concentrations in the water column. Hypoxia, or conditions of DO less than 2 mg/L, is generally accepted as the threshold at which the most severe effects on biota occur. Bottom waters that are not mixed during stratification are depleted of oxygen primarily through biological respiration. In 2015, these conditions were not seen in the water column at station BZ-6 (Appendix A).

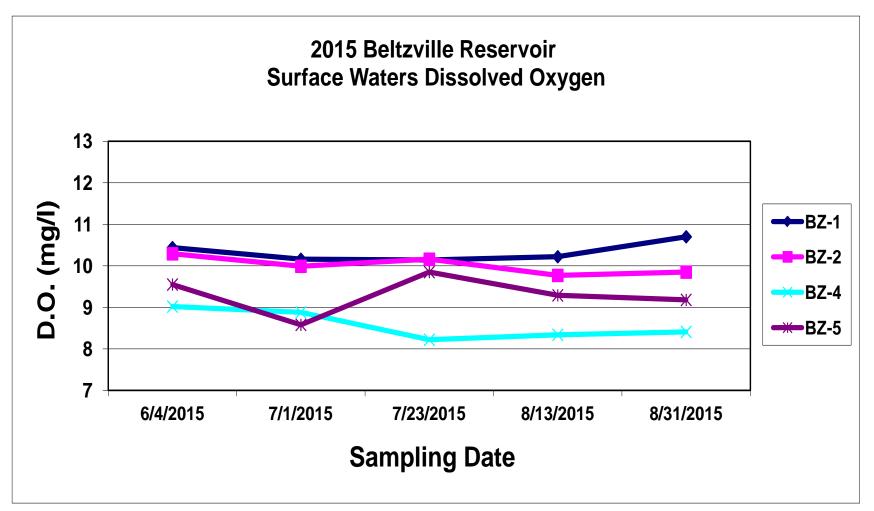


Figure 3-3. Dissolved oxygen concentrations measured in tributary and downstream surface waters at Beltzville Reservoir in 2015. (The PADEP water quality standard for dissolved oxygen is a minimum concentration of 5 mg/L.) See Appendix A for summary of plotted values. Station BZ-1 reflects reservoir release surface waters downstream of Beltzville Reservoir

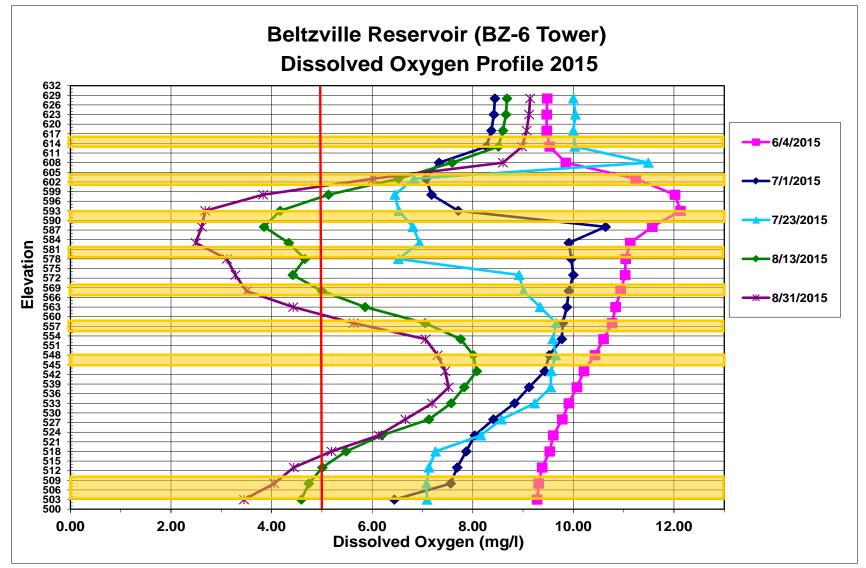


Figure 3-4. Dissolved oxygen profile at station BZ-6 of Beltzville Reservoir in 2015. (The PADEP water quality standard for DO is a minimum concentration of 5 mg/L.) See Appendix A for summary of plotted values.

3.1.3 pH

PH is the measure of the hydrogen –ion concentration in the water. 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 at upstream tributary (BZ-2S, BZ-4S and BZ-5S) and release (BZ-1S) surface water stations stayed within a tight range of values and followed a similar seasonal pattern at Beltzville Reservoir during 2015 (Fig. 3-5). The maximum pH value of 7.92 was recorded at Station BZ-4S on 23 July. The minimum pH value of 6.38 was recorded at station BZ-4S on 04 June.

In all months sampled in 2015, pH values in the lake water column were slightly higher near the water surface, declined rapidly, and remained relatively constant or slightly increasing throughout most of the remaining water column (Fig. 3-6). The higher pH readings near the surface can be attributed to algal productivity in the trophic zone of the lake. A slight increase in pH in bottom waters occurred in the portions of the water column experiencing anoxic or low oxygen conditions. This increase in pH may be attributed to anaerobic oxidation processes in the bottom waters of the lake. The pH measures at lake and tributary stations of Beltzville Reservoir during 2015 were in compliance with PADEP pH criteria. The standard for pH is a range of acceptable measures between 6 and 9.

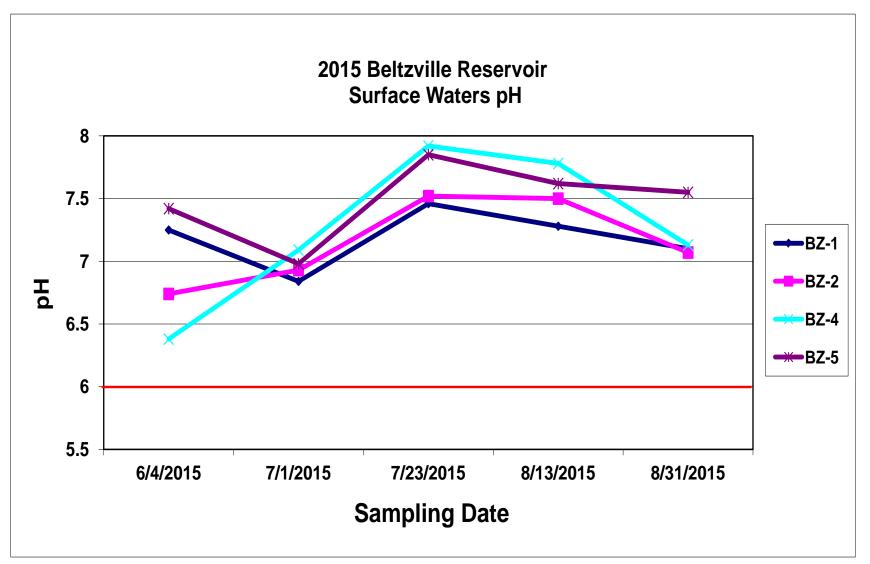


Figure 3-5. pH concentrations measured in tributary and downstream surface waters at Beltzville Reservoir in 2015. (The PADEP water quality standard for pH is between 6 and 9) See Appendix A for summary of plotted values.

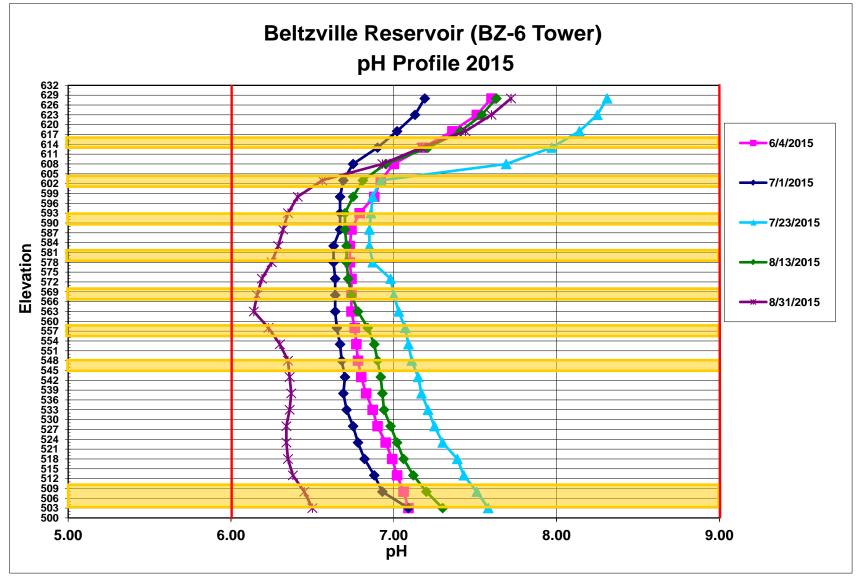


Figure 3-6. pH profile at station BZ-6 of Beltzville Reservoir in 2015. (The PADEP water quality standard for pH is between 6 and 9) See Appendix A for summary of plotted value

3.2 WATER COLUMN CHEMISTRY MONITORING

The following sections describe temporal, spatial, and patterns relating to depth for the water quality parameters measured in surface, middle, and bottom waters of Beltzville Reservoir during 2015 (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. Elevated ammonia in the lower water column of deep, stratified lakes and reservoirs usually results in those that are affected by eutrophication. 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.

Ammonia concentrations were low in Beltzville Reservoir during 2015. Concentrations measured at all stations and depths were less than the laboratory reporting limit of 0.05 mg/L during the entire sampling season and at all stations and depths. Concentrations of ammonia measured at Beltzville Reservoir were in compliance with the PADEP water quality standards during 2015. The state water quality standard for ammonia is dependent on temperature and pH (Table 3-1).

Table 3-1. P/	ADEP ammonia ni	trogen criteria (P	ennsylvania Cod	e, Title 25, Cha	pter 93,								
	1996). Specific ammonia criteria dependent on temperature and pH. (mg/L)												
PH													
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 Beltzville Reservoir in 2015													
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
	6/4/2015	10	<2	<.05	<.05	<.05	0.67	0.02	32	0.44	1.5	0.02	<3
	7/1/2015	11	<2	<.05	<.05	<.05	0.64	<.01	54	0.31	1.3	<.01	<3
	7/23/2015	12	<2	<.05	<.05	<.05	0.72	<.01	42	<.25	2.6	0.02	17
BZ-1S	8/13/2015	12	<2	<.05	<.05	<.05	0.75	<.01	43	<.25	1.8	<.01	137
	8/31/2015	12	<2	<.05	<.05	<.05	0.7	<.01	83	0.3	1.8	<.01	<3
	Mean	11.4	2	0.05	0.05	0.05	0.696	0.012	50.8	0.310	1.80	0.014	32.6
	Stdev	0.9	0	0	0	0	0.043	0.004	19.6	0.078	0.49	0.005	58.7
	Max	12	2	0.05	0.05	0.05	0.75	0.02	83	0.44	2.6	0.02	137
	Min	10	2	0.05	0.05	0.05	0.64	0.01	32	0.25	1.3	0.01	3
	No. of Det.	5	0	0	0	0	5	1	5	3	5	2	2
	6/3/2015	8	<2	<.05	<.05	<.05	0.21	<.01	46	<.25	<1	<.01	<3
	7/1/2015	6	<2	0.05	<.05	<.05	0.21	0.02	62	0.3	3	0.06	11
	7/23/2015	7	<2	<.05	<.05	<.05	0.15	<.01	40	<.25	<1	<.01	<3
	8/13/2015	8	<2	<.05	<.05	<.05	0.22	<.01	38	<.25	<1	0.01	<3
D7 20	8/31/2015	8	<2	<.05	<.05	<.05	0.14	<.01	67	<.25	<1	<.01	<3
BZ-2S	Mean	7.40	2.00	0.05	0.05	0.05	0.19	0.01	50.60	0.26	1.40	0.02	4.60
	Stdev	0.89	0.00	0.00	0.00	0.00	0.04	0.00	13.15	0.02	0.89	0.02	3.58
	Max	8.00	2.00	0.05	0.05	0.05	0.22	0.02	67.00	0.30	3.00	0.06	11.00
	Min	6.00	2.00	0.05	0.05	0.05	0.14	0.01	38.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	1.00	0.00	0.00	5.00	1.00	5.00	1.00	1.00	2.00	1.00

Table 3.2	Continued. Su	mmary o	f surface	, middle, a	and botto	m water	quality n	nonitorin	ig data fo	r Beltzvi	lle Rese	rvoir in 2()15
		ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	6/4/2015	11	<2	<.05	<.05	<.05	0.62	<.01	48	0.37	1.3	0.02	<3
	7/1/2015	12	<2	<.05	<.05	<.05	0.52	0.01	46	0.28	1.4	0.02	<3
	7/23/2015	10	<2	<.05	<.05	<.05	0.37	0.01	44	0.26	1.6	0.01	<3
	8/13/2015	13	<2	<.05	<.05	<.05	0.26	<.01	39	0.3	1.6	<.01	<3
BZ-3S	8/31/2015	11	<2	<.05	<.05	<.05	0.14	0.01	29	0.28	1.6	0.01	<3
DZ-33	Mean	11.40	2.00	0.05	0.05	0.05	0.38	0.01	41.20	0.30	1.50	0.01	3.00
	Stdev	1.14	0.00	0.00	0.00	0.00	0.19	0.00	7.60	0.04	0.14	0.01	0.00
	Max	13.00	2.00	0.05	0.05	0.05	0.62	0.01	48.00	0.37	1.60	0.02	3.00
	Min	10.00	2.00	0.05	0.05	0.05	0.14	0.01	29.00	0.26	1.30	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	3.00	5.00	5.00	5.00	4.00	0.00
	6/4/2015	11	<2	<.05	<.05	<.05	0.72	<.01	46	0.25	1.2	<.01	<3
	7/1/2015	10	<2	<.05	<.05	<.05	0.66	<.01	66	<.25	<1	<.01	<3
	7/23/2015	12	<2	<.05	<.05	<.05	0.68	<.01	57	<.25	1.5	<.01	<3
	8/13/2015	11	<2	<.05	<.05	<.05	0.83	0.04	43	<.25	1.7	0.04	<3
D7 2M	8/31/2015	12	<2	<.05	<.05	<.05	0.71	0.01	70	<.25	1	0.01	<3
BZ-3M	Mean	11.20	2.00	0.05	0.05	0.05	0.72	0.02	56.40	0.25	1.28	0.02	3.00
	Stdev	0.84	0.00	0.00	0.00	0.00	0.07	0.01	11.89	0.00	0.31	0.01	0.00
	Max	12.00	2.00	0.05	0.05	0.05	0.83	0.04	70.00	0.25	1.70	0.04	3.00
	Min	10.00	2.00	0.05	0.05	0.05	0.66	0.01	43.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	2.00	5.00	1.00	4.00	2.00	0.00

Table 3.2	Table 3.2 Continued. Summary of surface, middle, and bottom water quality monitoring data for Beltzville Reservoir in 2015										lle Rese	rvoir in 20	
		ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	6/4/2015	11	<2	<.05	<.05	<.05	0.69	0.05	42	<.25	<1	0.05	<3
	7/1/2015	11	<2	<.05	<.05	<.05	0.61	<.01	53	0.28	<1	0.02	<3
	7/23/2015	11	<2	<.05	<.05	<.05	0.61	<.01	54	<.25	1	<.01	<3
	8/13/2015	11	<2	<.05	<.05	<.05	0.67	0.06	66	<.25	<1	0.06	<3
D7 2D	8/31/2015	12	<2	<.05	<.05	<.05	0.55	<.01	71	0.33	<1	0.03	4
BZ-3B	Mean	11.20	2.00	0.05	0.05	0.05	0.63	0.03	57.20	0.27	1.00	0.03	3.20
	Stdev	0.45	0.00	0.00	0.00	0.00	0.06	0.02	11.48	0.03	0.00	0.02	0.45
	Max	12.00	2.00	0.05	0.05	0.05	0.69	0.06	71.00	0.33	1.00	0.06	4.00
	Min	11.00	2.00	0.05	0.05	0.05	0.55	0.01	42.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	2.00	5.00	2.00	1.00	4.00	1.00
	6/4/2015	9	<2	<.05	<.05	<.05	0.66	0.02	30	0.28	<1	0.02	10
	7/1/2015	6	<2	<.05	<.05	<.05	0.05	<.01	28	0.27	1.1	0.04	<3
	7/23/2015	7	<2	<.05	<.05	<.05	1.39	<.01	52	<.25	<1	<.01	<3
	8/13/2015	6	<2	<.05	<.05	<.05	0.27	<.01	29	0.43	1.7	0.02	<3
D7 40	8/31/2015	6	<2	<.05	<.05	<.05	0.27	<.01	34	<.25	1.5	0.01	<3
BZ-4S	Mean	6.80	2.00	0.05	0.05	0.05	0.53	0.01	34.60	0.30	1.26	0.02	4.40
	Stdev	1.30	0.00	0.00	0.00	0.00	0.53	0.00	9.99	0.08	0.32	0.01	3.13
	Max	9.00	2.00	0.05	0.05	0.05	1.39	0.02	52.00	0.43	1.70	0.04	10.00
	Min	6.00	2.00	0.05	0.05	0.05	0.05	0.01	28.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	1.00	5.00	3.00	3.00	4.00	1.00

Table 3.2 Continued. Summary of surface, middle, and bottom water quality monitoring data for Beltzville Reservoir in 2015													015
		ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	6/4/2015	14	2	<.05	<.05	<.05	1.13	0.15	75	1.52	2	0.31	309
	7/1/2015	11	2	<.05	<.05	<.05	0.62	<.01	67	0.75	9.2	0.1	33
	7/23/2015	12	<2	<.05	<.05	<.05	1.15	<.01	65	<.25	1.3	0.03	10
	8/13/2015	19	<2	<.05	<.05	<.05	1.17	<.01	31	0.34	1.8	0.07	<3
D7 59	8/31/2015	14	<2	<.05	<.05	<.05	1.12	0.02	101	0.43	1.1	0.03	10
BZ-5S	Mean	14.00	2.00	0.05	0.05	0.05	1.04	0.04	67.80	0.66	3.08	0.11	73.00
	Stdev	3.08	0.00	0.00	0.00	0.00	0.23	0.06	25.08	0.52	3.44	0.12	132.41
	Max	19.00	2.00	0.05	0.05	0.05	1.17	0.15	101.00	1.52	9.20	0.31	309.00
	Min	11.00	2.00	0.05	0.05	0.05	0.62	0.01	31.00	0.25	1.10	0.03	3.00
	No. of Det.	5.00	2.00	0.00	0.00	0.00	5.00	2.00	5.00	4.00	5.00	5.00	4.00
	6/4/2015	11	<2	<.05	<.05	<.05	0.62	0.02	48	0.4	1.3	0.02	<3
	7/1/2015	12	<2	<.05	<.05	<.05	0.52	<.01	53	0.32	1.6	0.03	<3
	7/23/2015	12	<2	<.05	<.05	<.05	0.38	<.01	55	<.25	1.7	<.01	<3
	8/13/2015	11	<2	<.05	<.05	<.05	0.27	0.02	43	0.35	1.5	0.03	<3
D7 (9	8/31/2015	12	<2	<.05	<.05	<.05	0.14	<.01	64	0.36	1.6	<.01	<3
BZ-6S	Mean	11.60	2.00	0.05	0.05	0.05	0.39	0.01	52.60	0.34	1.54	0.02	3.00
	Stdev	0.55	0.00	0.00	0.00	0.00	0.19	0.01	7.89	0.06	0.15	0.01	0.00
	Max	12.00	2.00	0.05	0.05	0.05	0.62	0.02	64.00	0.40	1.70	0.03	3.00
	Min	11.00	2.00	0.05	0.05	0.05	0.14	0.01	43.00	0.25	1.30	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	2.00	5.00	4.00	5.00	3.00	0.00

Table 3.2 Continued. Summary of surface, middle, and bottom water quality monitoring data for Beltzville Reservoir in 2015)15	
		ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	6/4/2015	11	<2	<.05	<.05	<.05	0.72	<.01	63	0.28	<1	<.01	<3
	7/1/2015	10	<2	<.05	<.05	<.05	0.66	<.01	69	<.25	<1	<.01	<3
	7/23/2015	13	<2	<.05	<.05	<.05	0.7	0.05	63	<.25	1.2	0.06	<3
	8/13/2015	11	<2	<.05	<.05	<.05	0.76	<.01	65	<.25	1.5	<.01	<3
D7 GM	8/31/2015	10	<2	<.05	<.05	<.05	0.71	<.01	68	0.28	<1	<.01	<3
BZ-6M	Mean	11.00	2.00	0.05	0.05	0.05	0.71	0.02	65.60	0.26	1.14	0.02	3.00
	Stdev	1.22	0.00	0.00	0.00	0.00	0.04	0.02	2.79	0.02	0.22	0.02	0.00
	Max	13.00	2.00	0.05	0.05	0.05	0.76	0.05	69.00	0.28	1.50	0.06	3.00
	Min	10.00	2.00	0.05	0.05	0.05	0.66	0.01	63.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	1.00	5.00	2.00	2.00	1.00	0.00
	6/4/2015	10	<2	<.05	0.05	<.05	0.65	<.01	56	1.79	1.6	1.4	51
	7/1/2015	12	<2	<.05	<.05	<.05	0.56	0.02	70	0.27	<1	0.03	3
	7/23/2015	12	<2	<.05	<.05	<.05	0.58	<.01	64	<.25	<1	<.01	<3
	8/13/2015	12	<2	<.05	<.05	<.05	0.54	<.01	58	0.29	1.1	0.02	<3
	8/31/2015	12	<2	<.05	<.05	<.05	0.55	0.09	77	0.62	1.2	0.11	34
BZ-6B	Mean	11.60	2.00	0.05	0.05	0.05	0.58	0.03	65.00	0.64	1.18	0.31	18.80
	Stdev	0.89	0.00	0.00	0.00	0.00	0.04	0.03	8.66	0.66	0.25	0.61	22.45
	Max	12.00	2.00	0.05	0.05	0.05	0.65	0.09	77.00	1.79	1.60	1.40	51.00
	Min	10.00	2.00	0.05	0.05	0.05	0.54	0.01	56.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	0.00	1.00	0.00	5.00	2.00	5.00	4.00	3.00	4.00	3.00

Table 3.2 Continued. Summary of surface, middle, and bottom water quality monitoring data for Beltzville Reservoir in 2015)15	
		ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	6/4/2015	11	<2	<.05	<.05	<.05	0.6	<.01	59	0.44	1.4	<.01	<3
	7/1/2015	11	<2	<.05	<.05	<.05	0.51	0.01	68	0.27	1.3	0.02	<3
	7/23/2015	9	<2	<.05	<.05	<.05	0.24	<.01	43	<.25	1.8	0.01	<3
	8/13/2015	12	<2	<.05	<.05	<.05	0.21	<.01	42	0.47	1.7	0.02	<3
D7 79	8/31/2015	10	<2	<.05	<.05	<.05	0.09	<.01	49	0.36	1.6	<.01	<3
BZ-7S	Mean	10.60	2.00	0.05	0.05	0.05	0.33	0.01	52.20	0.36	1.56	0.01	3.00
	Stdev	1.14	0.00	0.00	0.00	0.00	0.22	0.00	11.12	0.10	0.21	0.01	0.00
	Max	12.00	2.00	0.05	0.05	0.05	0.60	0.01	68.00	0.47	1.80	0.02	3.00
	Min	9.00	2.00	0.05	0.05	0.05	0.09	0.01	42.00	0.25	1.30	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	1.00	5.00	4.00	5.00	3.00	0.00
	6/4/2015	11	<2	<.05	<.05	<.05	0.72	0.01	51	0.29	<1	0.03	<3
	7/1/2015	11	<2	<.05	<.05	<.05	0.55	<.01	67	0.62	6.2	0.1	27
	7/23/2015	11	<2	<.05	<.05	<.05	0.82	<.01	66	<.25	1.7	<.01	<3
	8/13/2015	10	<2	<.05	<.05	<.05	0.45	<.01	43	0.3	2.3	0.02	<3
D7 7M	8/31/2015	13	<2	<.05	<.05	<.05	0.66	<.01	68	0.32	1.3	<.01	<3
BZ-7M	Mean	11.20	2.00	0.05	0.05	0.05	0.64	0.01	59.00	0.36	2.50	0.03	7.80
	Stdev	1.10	0.00	0.00	0.00	0.00	0.14	0.00	11.34	0.15	2.12	0.04	10.73
	Max	13.00	2.00	0.05	0.05	0.05	0.82	0.01	68.00	0.62	6.20	0.10	27.00
	Min	10.00	2.00	0.05	0.05	0.05	0.45	0.01	43.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	0.00	0.00	0.00	5.00	1.00	5.00	4.00	4.00	3.00	1.00

Table 3.2	Table 3.2 Continued. Summary of surface, middle, and bottom water quality monitoring data for Beltzville Reservoir in 2015												
		ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	6/4/2015	11	<2	0.05	<.05	<.05	0.7	0.07	59	0.3	<1	0.3	<3
	7/1/2015	11	<2	<.05	<.05	<.05	0.62	<.01	66	<.25	<1	<.01	<3
	7/23/2015	11	<2	<.05	<.05	<.05	0.69	<.01	54	<.25	1.7	0.02	<3
	8/13/2015	13	<2	<.05	<.05	0.06	0.76	<.01	63	0.26	1.8	0.06	<3
BZ-7B	8/31/2015	13	<2	<.05	<.05	<.05	0.54	<.01	37	0.3	1.4	<.01	<3
BZ-/B	Mean	11.80	2.00	0.05	0.05	0.05	0.66	0.02	55.80	0.27	1.38	0.08	3.00
	Stdev	1.10	0.00	0.00	0.00	0.00	0.08	0.03	11.43	0.03	0.38	0.12	0.00
	Max	13.00	2.00	0.05	0.05	0.06	0.76	0.07	66.00	0.30	1.80	0.30	3.00
	Min	11.00	2.00	0.05	0.05	0.05	0.54	0.01	37.00	0.25	1.00	0.01	3.00
	No. of Det.	5.00	0.00	1.00	0.00	1.00	5.00	1.00	5.00	3.00	3.00	3.00	0.00

< Laboratory analysis result was less than the method or reporting limit.

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 in the waters of Beltzville Reservoir measured at all stations and depths exceeded the laboratory reporting limit of 0.05 mg/L in one sample (0.06 mg/L) during the 2015 sampling season. This sample was collected 13 August in the reservoir bottom waters at station BZ-7B.

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 was distributed uniformly in the water column of Beltzville Reservoir during 2015 with sample results ranging from 0.05 mg/L to 1.39 mg/L (Table 3-2). The highest recorded single nitrate measure of 1.39 mg/L was measured on 23 July at station BZ-4S. Station BZ-5S maintained the highest seasonal mean concentration (1.04 mg/L) of all stations.

Beltzville Reservoir was in compliance with the PADEP water quality standard for nitrite and nitrate during 2015. The standard is a summed concentration of nitrite and nitrate of less than 10 mg/L. Throughout the monitoring period, a maximum summed concentration across all stations and depths of 1.44 mg/L was measured at station BZ-4S on 23 July.

3.2.3 Total Kjeldahl Nitrogen

Total Kjeldahl nitrogen (TKN) is a measure of organic nitrogen that includes ammonia. Organic nitrogen is not immediately available for biological activity and is therefore not available for plant growth until decomposition to inorganic form occurs. Total kjeldahl nitrogen (TKN) was low in the water column of Beltzville Reservoir during 2015 with many sample concentrations measuring less than or slightly exceeding the 0.25 mg/L laboratory reporting limit (Table 3-2). The highest concentration of 1.79 mg/L was recorded at station BZ-6B on 04 June.

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. In 2015, greater than half of the samples measured for total phosphorus were less

than or slightly exceeding the EPA suggested maximum concentration and laboratory reporting limit of 0.01 mg/L (Table 3-2). In-lake bottom water samples typically exceeded this concentration. The highest single sample concentration of 1.40 mg/L measured in the reservoir bottom waters was at Station BZ-6B on 04 June. The elevated TP readings in deep reservoir waters are typically associated with phosphorus release from bottom sediments during low oxygen conditions. Upstream tributary station BZ-5S (Pohopoco Creek) exceeded the EPA 0.01 mg/L suggested concentration throughout the sampling season. Land use or some other watershed factors contribute to nutrient loading in this tributary. Total Phosphorus sample results for 04 June (0.31 mg/L) and 01 July (0.10 mg/L) at station BZ-5S is attributed to rainstorm runoff occurring during those sampling events. A spike in TP readings associated with these rainstorm events is also reflected in Station BZ-7B located downstream of Station BZ-5S within the upper lake.

3.2.5 Dissolved Phosphorus

In 2015, dissolved phosphorus (Diss. P) concentrations measured at all stations and depths in the water column of Beltzville Reservoir were less than or equal to the reporting limit of 0.05 mg/L (Table 3-2).

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. In 2015, dissolved phosphate concentrations were low with most sample concentrations remaining below the laboratory reporting limit of 0.01 mg/L. The highest concentration of 0.15 mg/L was measured at station BZ-5S on 04 June. This spike in PO4 at Station BZ-5S is attributed to rainstorm runoff during the sampling event.

3.2.7 Total Dissolved Solids

Total dissolved solids (TDS) is 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. Concentrations of TDS in the water column of Beltzville Reservoir were consistently low during 2015 (Table 3-2). Concentrations among all stations and depths ranged from 28 to 101 mg/L. Total dissolved solids measured at Beltzville Reservoir in 2015 were in compliance with PADEP water quality standards. The state water quality standard for TDS is a maximum concentration of 500 mg/L.

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 concentrations in the waters of Beltzville Reservoir were low during 2015 (Table 3-2). Many concentrations measured at all stations and depths were less than or near the laboratory reporting limit of 3.0 mg/L. The maximum concentration of 309 mg/L was measured in tributary surface waters at station BZ-5S on 04 June. This spike in TSS at Station BZ-5S is attributed to stormwater runoff experienced during that sampling event. High measures of TSS can also be the result of sample collection error associated with capturing disturbed fine sediments in the lake bottom sample during field sampling. This sample error particularly applies to any elevated or unexplained high TSS water samples collected at bottom water sampling stations BZ-6B, BZ-3B, and BZ-7B.

3.2.9 Biochemical Oxygen Demand

Five-day biochemical oxygen demand (BOD5) 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.

Biochemical oxygen demand concentrations in the water column of Beltzville Reservoir were consistently low in all months and stations sampled (Table 3-2). All samples were below the laboratory reporting limit of 2.0 mg/L for the entire sampling season. Based on the seasonal sampling results, it is inferred that in 2015 Beltzville Reservoir and its associated tributaries contain very clean water with little biodegradable organic wastes.

3.2.10 Alkalinity

Alkalinity (ALK) 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 CaCO₃ except where natural conditions are less.

Alkalinity in the waters of Beltzville Reservoir was relatively low during 2015 (Table 3-2). For all sampling stations and depths, alkalinity measures ranged from 19.0 mg/L to 6.0 mg/L and remained below the state minimum criteria for all samples. The natural alkalinity of water is largely dependent on the underlying geology and soils within the surrounding watershed. The

low alkalinity measured at Beltzville Reservoir probably results from the regional geology, which is primarily sandstone and shale. Based on this, the reservoir waters and surrounding tributaries are in compliance with the PADEP alkalinity criteria, due to the regional natural conditions.

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 plant discharges. The amount of carbon in a freshwater stream is an indicator of the organic character of the stream or 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 Beltzville Reservoir were low during 2015 (Table 3-2). Concentrations of TOC at all stations and depths in 2015 ranged from 9.20 mg/L to <1.0 mg/L (laboratory reporting limit).

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* concentrations in the surface waters (0-15 feet) of Beltzville Reservoir were low during 2015 (Appendix A). Concentrations measured in surface waters at all lake body stations ranged between 1.5 and 13.4 ug/L with an average concentration of 4.19 ug/L. The highest concentrations during the sampling season were routinely recorded at lake station BZ-7 located in the upstream area of the reservoir in close proximity to tributary inflows.

3.3 TROPHIC 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. 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. Classification of Beltzville Reservoir was based on a single sample each month during the sampling season taken at station BZ-6 (Figure 3-7).

TSIs calculated for measures of total phosphorus (Figure 3-7) classified Beltzville Reservoir as eutrophic in early July (53.20) and early August (53.20), oligotrophic in late July (37.35) and late August (37.35), and mesotrophic in June (47.35). TSIs calculated for measures of secchi disk depth (Figure 3-7) classified Beltzville Reservoir as mesotrophic in June (47.94), early July (44.81), late July (42.20), early August (42.80) and late August (43.93). TSIs

calculated for measures of chlorophyll *a* (Figure 3-7) classified Beltzville Reservoir as oligotrophic in early July (37.74), and mesotrophic in June (47.01), late July (40.23), early August (42.31) and late August (43.43).

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, based on TSI's, was mesotrophic throughout the 2015 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). Taking into account the general agreement between the EPA classifications with that of the Carlson TSI's, the trophic condition of Beltzville Reservoir was predominantly mesotrophic/oligotrophic in 2015.

Table 3-3. EPA trophic classification criteria and average monthly measures for Beltzville Reservoir in 2015.												
Water Quality Variable	Oligo- trophic	Meso- trophic	Eutrophic	04 June	01 July	23 July	13 August	31 August				
Total phos. (ppb)	<10	10-20	>20	20	30	<10	30	<10				
Chlorophyll a (ppb)	<4	4-10	>10	5.37	2.07	2.67	3.3	3.7				
Secchi depth (meters)	>4	2-4	<2	2.31	2.87	3.44	3.30	3.05				

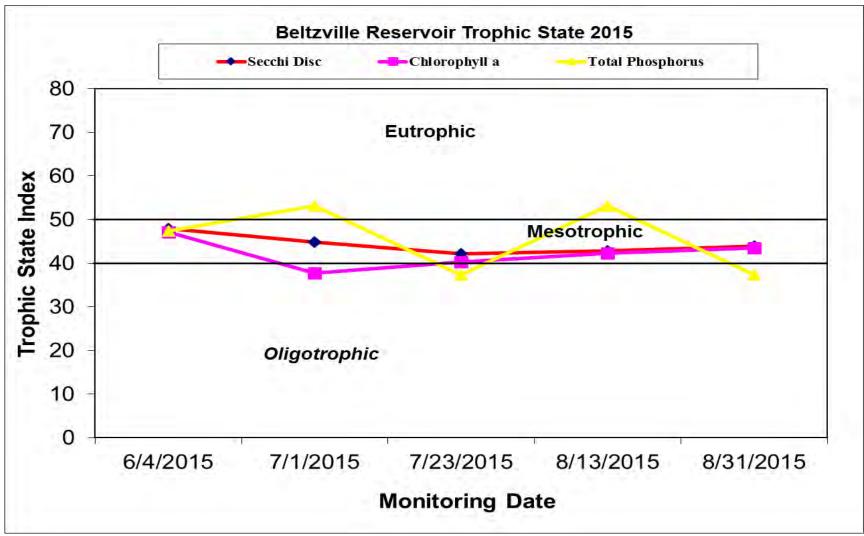


Figure 3-7. Trophic state indices calculated from secchi disk depth and concentrations of total phosphorus and chlorophyll *a* at Beltzville Reservoir in 2015.

3.4 RESERVOIR BACTERIA MONITORING

Two forms of coliform bacteria contamination were monitored in the tributary and lake surface waters at Beltzville Reservoir during 2015 including total and fecal coliform (Table 3-4). Total coliform includes *escherica 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 values for all stations ranged from 28 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.

With respect to PADEP water quality standards, fecal coliform bacteria contamination was low in Beltzville Reservoir and its tributaries during 2015. 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 then 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. The fecal coliform samples collected at Beltzville Reservoir did exceed this standard on one occasion in 2015. Fecal coliform values for all tributary and lake stations ranged from less than the detection limit of 2 colonies/100ml to 6500 colonies/100ml at upstream tributary station BZ-5S on 01 July. This single elevated sample occurred during a stormwater runoff event in the watershed and is reflective of the land use types upstream that directly influence the water quality of the reservoir and tributaries. Water contact recreation is permitted at Beltzville Reservoir. However, the recreational swimming beach is monitored and managed by the Commonwealth of Pennsylvania. No long term elevated bacteria counts were recorded in the main reservoir body where public water recreation is also permitted.

Table 3-4 Bacter 2015. NS = Not			00ml) at Beltzvil	le R	eservoir and tr	ibutaries during
STATION	DATE	То	tal Coliform (TC)	F	ecal Coliform (FC)	Escherichia coli
	6/04/2015		410		54	NS
	7/1/2015	>	2400		86	NS
BZ-1S	7/23/2015	>	2400		21	NS
	8/13/2015		1300		30	NS
	8/31/2015	>	2400		13	NS
	6/04/2015		1100		2	NS
	7/1/2015	>	2400		430	NS
BZ-2S	7/23/2015	>	2400		15	NS
	8/13/2015		2000		38	NS
	8/31/2015		980		16	NS
	6/4/2015		28	<	2	NS
	7/1/2015		210		3	NS
BZ-3S	7/23/2015		190	<	2	NS
	8/13/2015		250		5	NS
	8/31/2015		360		2	NS
	6/4/2015	>	2400		15	NS
	7/1/2015		2400		58	NS
BZ-4S	7/23/2015		1000		3	NS
	8/13/2015	>	2400		20	NS
	8/31/2015	>	2400		11	NS
	6/4/2015	>	2400		260	NS
	7/1/2015	>	2400		6500	NS
BZ-5S	7/23/2015	>	2400		56	NS
	8/13/2015	>	2400		440	NS
	8/31/2015	>	2400		140	NS
	6/4/2015		56	<	2	NS
	7/1/2015		110		2	NS
BZ-6S	7/23/2015		440	<	2	NS
	8/13/2015		460		5	NS
	8/31/2015		290		2	NS
	6/4/2015		160		2	NS
	7/1/2015		690		11	NS
BZ-7S	7/23/2015		440	<	2	NS
	8/13/2015		1400		11	NS
	8/31/2015		770		2	NS NS
		<u> </u>			<u>~</u>	

Highlighted counts exceed single sample State (1000 fecal colonies/100ml) bathing beach criteria.

4.0 **REFERENCES**

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APPENDIX A

STRATIFICATION DATA TABLES

Station	Date	Time	Depth	Temp	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L	P	mV	mV	NTU	ug/L	mS/cm
	6/4/2015	6:07:31	0.5	12.37	97.7	10.44	7.25	-49.6	172.7	39.1	6.7	0.175
BZ-1S	7/1/2015	10:16:56	0.5	15.38	102	10.16	6.84	-26.7	169	39.2	1.6	0.098
Outfall	7/23/2015	11:12:39	0.5	17.8	107	10.14	7.46	-62.1	137.3	38.8	1.9	0.096
Pohopoco	8/13/2015	10:35:16	0.5	15.88	103	10.22	7.28	-51.7	116.8	39.6	1.2	0.115
	8/31/2015	12:02:36	0.5	17.83	113	10.7	7.1	-41.5	119.2	38.6	1.3	0.104
								P	P			
								l l				
	6/4/2015	10:02:07	0.5	12.56	96.8	10.29	6.74	-21.2	191.8	39.4	0	0.197
BZ-2S	7/1/2015	10:05:15	0.5	13.05	95	9.99	6.93	-31.9	168.8	47.6	2.2	0.108
Pine Run	7/23/2015	11:02:26	0.5	13.61	97.8	10.16	7.52	-64.8	125.8	38.3	0.7	0.075
Trib.	8/13/2015	10:23:50	0.5	14.51	95.9	9.77	7.5	-63.8	112.7	39.2	0	0.111
	8/31/2015		0.5	15.78	99.4	9.85	7.07	-39.8	123.2	38.9	1.1	0.082
		8:14:10	0.5	20.14	105	9.55	7.71	-76.9	155.7	34.5	5.4	0.177
		8:13:33	5	20.14	105	9.54	7.63	-72.2	157.8	34.6	6.5	0.177
		8:12:46	10	20.13	106	9.56	7.49	-64	161.2	35.1	6.7	0.177
		8:11:48	15	20.05	106	9.62	7.29	-52.6	165.1	35.3	7.4	0.175
		8:10:35	20	17.77	108	10.26	7.04	-38.2	179	35.7	12	0.175
BZ-3		8:09:34	25	14.55	103	10.48	6.98	-34.7	187.3	35.4	6.6	0.178
Bouy/Beach		8:08:36	30	11.21	108	11.89	6.99	-35.3	187.5	34.1	3.5	0.182
		8:07:36	35	9.23	102	11.7	6.96	-33.3	191.9	33.7	6.7	0.187
		8:06:47	40	8.25	93.4	10.99	6.93	-32.1	196.6	33.8	5.7	0.19
	6/4/2015	8:05:54	45	7.67	90.3	10.78	6.95	-32.8	197.5	33.6	3.2	0.193
		8:04:34	50	7.4	90.8	10.91	6.97	-34.2	196.9	33.5	4.1	0.194
		8:03:45	55	7.13	90	10.89	7	-35.7	196.5	33.4	2.5	0.195
		8:02:26	60	6.97	88.7	10.77	7.03	-37.5	196.2	33.4	2.3	0.195
		8:01:34	65	6.82	87.8	10.7	7.06	-38.7	196	33.2	2.7	0.196
		8:00:40	70	6.66	87.1	10.66	7.08	-40.1	195.7	33.3	2.4	0.197
		7:59:32	75	6.53	85.9	10.55	7.12	-42.3	195	33.1	3	0.197
		7:58:38	80	6.36	85.6	10.55	7.15	-44.1	194.5	33	2.6	0.198
		7:57:52	85	6.21	83.8	10.38	7.17	-45.3	194.5	32.9	2	0.198
		7:57:15	90	5.94	82.3	10.26	7.2	-46.7	194.7	32.7	2	0.199
		7:56:14	95	5.85	80.9	10.11	7.24	-49.1	194.5	32.6	2	0.2
		7:54:55	99	5.83	81.3	10.16	7.32	-53.3	193.6	32.2	1.3	0.202
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Station	Date	Time	Depth	Temp	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
				-		3 -					- J	
		8:20:17	0.5	21.63	95.6	8.42	7.17	-45.5	142.3	37.9	2.4	0.095
		8:19:53	5	21.63	95.6	8.41	7.14	-43.8	143.5	37.7	2.5	0.000
		8:19:08	10	21.63	95.4	8.4	7.07	-39.9	146.1	37.8	2.4	0.095
		8:18:04	15	21.62	94.7	8.34	6.93	-31.8	152.2	38.1	1.8	0.095
		8:17:07	20	21.22	91.1	8.08	6.78	-22.9	161.2	39	2.8	0.096
		8:16:03	25	18.52	84.5	7.91	6.66	-16.1	172.5	46.4	2	0.098
BZ-3		8:15:07	30	16.31	75	7.35	6.59	-12.4	177.4	39.8	1.9	0.101
Bouy/Beach		8:14:02	35	12.72	75.3	7.99	6.58	-12.2	182	38.5	2.9	0.097
,		8:12:34	40	9.29	81.2	9.32	6.6	-13.4	184.5	37.9	2	0.095
	7/1/2015	8:11:34	45	8.29	79.3	9.33	6.61	-13.8	186	37.9	1.6	0.095
		8:10:50	50	7.72	82.2	9.8	6.62	-14.9	185.2	37.7	2	0.094
		8:09:56	55	7.47	82.6	9.9	6.64	-15.8	184.5	37.4	1.7	0.094
		8:08:24	60	7.28	79.2	9.54	6.65	-16.6	184.6	37.5	1.6	0.094
		8:06:40	65	7.13	81.4	9.84	6.69	-18.6	182.9	37.4	1.8	0.094
		8:05:33	70	6.99	79.5	9.66	6.7	-19.3	182.8	37.5	1.8	0.094
		8:04:48	75	6.75	78.9	9.63	6.72	-20	182.6	37.5	1.6	0.094
		8:04:19	80	6.61	78.1	9.58	6.73	-20.8	182.2	37.7	1.7	0.094
		8:03:15	85	6.42	76.5	9.42	6.76	-22.2	181.4	37.3	1.5	0.094
		8:02:08	90	6.28	75.2	9.3	6.78	-23.5	180.6	37	2	0.094
		8:01:06	95	6.12	73.5	9.12	6.81	-25.2	179.7	36.8	1.8	0.094
		7:59:28	100	6.08	68.3	8.48	6.85	-27.7	177.9	37.2	1.6	0.094
		7:58:17	105	5.94	60.9	7.59	6.89	-29.9	178	38.9	1.6	0.095
		9:16:00	0.5	25.07	115	9.47	8.49	-123.2	58	33.2	1.8	0.088
		9:14:53	5	25.16	115	9.44	8.38	-116.8	62.2	33.3	2	0.088
		9:13:56	10	25.15	115	9.44	8.18	-105	66.2	33.6	3.6	0.088
		9:12:38	15	24.14	127	10.63	7.78	-81.7	71.1	34	5	0.088
		9:11:53	20	21.89	110	9.63	7.12	-42.9	99.6	34.2	7.3	0.089
BZ-3		9:10:34	25	20.28	80.5	7.27	6.99	-35.3	112.7	34	5	0.092
Bouy/Beach	7/23/2015	9:09:24	30	18.83	69.6	6.48	6.94	-32.3	118.1	34.1	3.7	0.096
		9:08:38	35	18.18	69.1	6.51	6.93	-31.8	119.6	34.3	2.8	0.098
		9:07:36	40	17.38	68.6	6.57	6.91	-30.8	122.3	34.4	2.4	0.1
		9:06:53	45	15.77	65.3	6.48	6.92	-31	124.5	34.1	3.1	0.1
		9:04:48	50	13.26	57.5	6.03	6.93	-31.5	128.6	34.6	3	0.096
		9:03:07	55	9.32	57.2	6.55	6.98	-34.4	131.7	34.5	2	0.097
		9:01:22	60	8.26	65.9	7.75	7.05	-38.5	130.2	34.3	1.8	0.097
		9:00:11	65	7.94	72.6	8.6	7.09	-40.9	128.6	34.1	1.7	0.097
		8:59:02	70	7.65	74	8.84	7.14	-43.4	127	34.1	1.5	0.097
		8:57:56	75	7.43	72.8	8.74	7.17	-44.9	126.5	34	1.7	0.097
		8:56:18	80	7.27	69.1	8.34	7.2	-46.7	126.2	34.1	1.7	0.098
		8:55:17	85	7.13	64.9	7.85	7.23	-48.3	126	34.2	1.8	0.098
		8:54:21	90	7.03	62.1	7.53	7.27	-50.4	124.9	34	1.6	0.098
		8:52:21	95	6.86	57.2	6.97	7.34	-54.6	123.3	34	1.3	0.098
		8:49:50	100	6.74	49	5.98	7.45	-60.4	120.6	33.9	1.7	0.099

Station	Date	Time	Depth	Temp	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
		8:50:40	0.5	24.34	104	8.7	7.91	-89	63.6	38.1	3.2	0.106
		8:49:59	5	24.36	104	8.7	7.8	-82.8	66.5	38.3	3.4	0.106
		8:49:12	10	24.36	103	8.63	7.65	-73.9	69.7	38.1	3.9	0.105
		8:48:14	15	24.35	102	8.56	7.4	-59	75.4	38.4	4.3	0.105
BZ-3		8:46:59	20	23.51	84.7	7.19	6.88	-28.9	102.8	38.5	3	0.104
Bouy/Beach		8:45:56	25	22	75.6	6.61	6.76	-21.5	111.2	38	2.4	0.112
,		8:44:37	30	20.86	55.9	5	6.6	-12.5	121.9	37.7	3.4	0.117
		8:43:47	35	20.28	52.4	4.74	6.64	-14.6	120.6	37.7	2.7	0.12
		8:42:45	40	19.41	47.9	4.41	6.65	-15.5	121.6	37.8	3.1	0.12
	8/13/2015	8:41:42	45	18.43	47.6	4.47	6.7	-18.5	120.7	38	3	0.122
		8:40:53	50	17.15	48.1	4.64	6.71	-19.2	122.1	38.1	1.9	0.125
		8:39:40	55	15.05	44	4.43	6.73	-20.5	124.8	38.7	3.1	0.124
		8:38:45	60	11.2	42.3	4.64	6.75	-21.8	128.9	38.2	2	0.126
		8:37:53	65	9.92	44.9	5.08	6.8	-24.7	129.1	38.1	2.2	0.127
		8:36:44	70	8.68	52.3	6.09	6.87	-28.2	128.4	37.8	1.7	0.127
		8:35:40	75	8.18	57.9	6.82	6.93	-31.7	127.1	37.7	1.6	0.127
		8:34:05	80	7.57	64.8	7.76	7.01	-36.4	124.5	37.4	1.6	0.128
		8:33:00	85	7.41	60.3	7.24	7.06	-38.8	124.1	37.4	1.8	0.128
		8:32:04	90	7.26	60.5	7.3	7.12	-42.2	121.6	37	1.8	0.129
		8:30:44	95	7.11	56.1	6.79	7.21	-47.2	118.2	36.7	1.5	0.134
		8:29:17	100	6.9	53.2	6.48	7.34	-54.5	113.6	58.9	2.3	0.139
		9:45:28	0.5	24.64	110	9.13	7.87	-86.8	60	37.6	2.9	0.106
		9:44:30	5	24.6	110	9.13	7.73	-78.7	61.7	37.6	4.9	0.106
		9:42:57	10	24.53	108	9.01	7.44	-61.3	67.4	37.8	5.6	0.106
		9:41:50	15	24.33	105	8.74	7.09	-40.7	77.6	37.9	6.2	0.106
		9:40:45	20	23.93	93.7	7.89	6.75	-21	95.6	38.3	4.3	0.107
		9:39:53	25	22.4	60.7	5.27	6.6	-12.4	113.9	37.5	4.3	0.113
BZ-3		9:38:53	30	21.39	41.4	3.66	6.54	-8.9	119.2	37.3	3	0.119
Bouy/Beach		9:38:16	35	20.75		3.27	6.53	-8.7	121.4		2.4	0.12
	8/31/2015	9:36:43	40	20.03	34.2	3.11	6.55	-9.5	124.3	37.7	2.3	0.121
		9:35:54	45	19.08	33.6	3.11	6.56	-10.2	126.3	38	2.1	0.122
		9:35:14	50	18	34	3.21	6.57	-11.2	128.1	38.7	1.8	0.123
		9:34:35	55	15.52	35.7	3.56	6.57	-11.5	131.8	38.5	2	0.125
		9:34:09	60	12.88	38.7	4.09	6.6	-13.2	133.5	38.1	2.2	0.126
		9:33:39	65	10.26	43.2	4.85	6.63	-15.1	134.2	37.6	2.2	0.128
		9:32:59	70	8.98	47.7	5.52	6.67	-17.5	133.2	37.4	1.5	0.129
		9:31:28	75	8.34	52.6	6.18	6.73	-20.9	132.3	37.4	2.3	0.129
		9:30:15	80	7.79	58	6.9	6.78	-23.6	130.6	37.4	1.8	0.13
		9:29:08	85	7.43	54.4	6.53	6.81	-25.2	131	37.6	2.5	0.131
		9:28:02	90	7.2	55.3	6.67	6.85	-27.5	129.1	37.3	2	0.131
		9:27:00	95	7.07	51	6.18	6.88	-29.2	128.4	37.1	1.6	0.133
		9:25:36	100	6.92	43.4	5.27	6.93	-32.1	127.1	37.4	1.9	0.136
		9:24:17	105	6.83	38.6	4.7	6.99	-35.1	124.4	37.6	2.3	0.138

Station	Date	Time	Depth	Temp	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L	1	mV	mV	NTU	ug/L	mS/cm
BZ-4S	6/4/2015	9:48:50	0.5	13.29	86.2	9.02	6.38	-0.7	197.9	36.2	0	0.154
Wild Creek	7/1/2015	9:53:20	0.5	20.54	98.7	8.88	7.09	-41.1	129.7	39.3	1.9	0.037
Upstream	7/23/2015	10:49:56	0.5	24	97.7	8.22	7.92	-89.8	89.3	38.6	1.6	0.039
	8/13/2015	10:11:19	0.5	22.99	97.2	8.34	7.78	-81.1	62.3	41.1	2.7	0.056
	8/31/2015	11:34:03	0.5	20.77	93.9	8.41	7.13	-43.1	120.6	39.1	0.6	0.075
BZ-5S	6/4/2015	9:34:21	0.5	14.69	94.2	9.55	7.42	-59.4	139.6	47.3	0.7	0.198
Pohopoco	7/1/2015	9:43:47	0.5	15.77	86.5	8.58	6.98	-34.6	127.5	99.8	6.9	0.069
Upstream	7/23/2015	10:39:57	0.5	16.82	102	9.85	7.85	-84	86.4	47.1	0.8	0.114
-	8/13/2015	10:01:23	0.5	16.67	95.5	9.29	7.62	-71	-8.4	45.5	1.2	0.135
	8/31/2015	11:20:11	0.5	18.7	98.4	9.18	7.55	-67.4	75.5	45.7	0.5	0.138
		7:46:28	0.5	20.08	105	9.48	7.6	-70.2	152	34.9	3.9	0.177
		7:45:48	5	20.14	105	9.47	7.51	-65.2	154.2	35	6.3	0.177
		7:44:57	10	20.12	104	9.47	7.36	-56.5	157.8	36	5.9	0.177
		7:44:06	15	20.12	105	9.53	7.18	-46.2	162.4	35.8	6.9	0.176
		7:43:16	20	18.95	106	9.85	7	-35.8	173.4	37.1	13.5	0.176
		7:41:46	25	15.15	112	11.24	6.92	-31	179.4	35.5	6.8	0.178
		7:40:45	30	11.47	110	12.02	6.88	-28.7	183.8	34.7	5.5	0.183
BZ-6		7:39:04	35	9.08	105	12.13	6.79	-24.3	188.3	34.4	7.7	0.188
In-Lake		7:38:16	40	8.14	98.1	11.57	6.74	-21.4	193.6	34.2	9.4	0.191
Tower		7:37:23	45	7.67	93.3	11.13	6.73	-20.7	195.6	34	6	0.193
	6/4/2015	7:36:43	50	7.4	91.9	11.04	6.73	-20.7	195.9	33.9	3.9	0.194
Secchi		7:36:11	55	7.29	91.6	11.03	6.74	-21.1	195.6	33.8	2.4	0.194
2.31 m		7:35:01	60	7.04	90.2	10.94	6.74	-21.4	195.5	33.7	2.8	0.195
		7:34:09	65	6.88	89.1	10.84	6.74	-21.6	195.6	33.7	1.8	0.195
		7:33:19	70	6.73	88.1	10.77	6.76	-22.6	194.8	33.7	2.5	0.195
		7:32:07	75	6.53	86.4	10.6	6.77	-23.1	194.5	33.7	2.1	0.196
		7:31:22	80	6.29	84.5	10.43	6.78	-23.8	194.4	33.9	2.1	0.196
		7:30:28	85	6.1	82.3	10.21	6.8	-24.6	194.2	33.7	1.4	0.197
		7:29:31	90	5.9	80.7	10.07	6.83	-26.3	193.3		1.5	0.197
		7:28:22	95	5.85	79.3	9.91	6.87	-28.5	191.8	33.7	1.4	0.198
		7:27:25	100	5.77	78.2	9.78	6.9	-30.4	190.8	33.6	1.5	0.198
		7:26:05	105	5.71	76.6	9.6	6.95	-33.1	188.9	33.7	1.3	0.198
		7:25:11	110	5.72	76	9.53	6.99	-35.3	187.5	33.5	2	0.199
		7:24:12	115	5.68	74.8	9.38	7.02	-37	186.6	33.5	1.5	0.199
		7:23:30	120	5.67	74.2	9.31	7.06	-39 -40.7	185.6	36.3	1.9	0.2
		7:22:23	125	5.69	74	9.28	7.09	-40.7	184.7	33.6	1.9	0.201

Station	Date	Time	Denth	Temp	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
Station	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
	, 6/ 1	7:50:01	0.5	21.64	95.8	8.44	7.19	-46.8	127.7	37.8	2.3	0.095
		7:49:24	0.5 5	21.65	95.8 95.7	8.42	7.19	-40.0	127.7	37.0	2.3	0.095
		7:49:24	10	21.65	95.1	8.37	7.02	-43.4	129.7	38.1	2	0.095
		7:47:38	15	21.64	93.9	8.27	6.9	-30.1	138.9	38.5	1.5	0.095
		7:46:35	20	19.99	80.6	7.33	6.75	-21.5	151.8	40	2.9	0.093
		7:45:31	25	17.64	74.2	7.07	6.69	-18.1	157.9	39	3.1	0.000
		7:44:42	30	15.57	72.1	7.18	6.67	-17.1	161.8	38.6	2.8	0.101
		7:43:55	35	13.7	74.3	7.71	6.67	-17.1	164.1	38.3	1.9	0.098
BZ-6		7:40:58	40	9.83	93.9	10.64	6.67	-17.1	168.7	38.2	1.3	0.095
In-Lake		7:39:28	45	8.3	84.3	9.91	6.63	-15.2	173.3	37.9	1.2	0.094
Tower	7/1/2015	7:38:20	50	7.8	83.7	9.96	6.63	-15.3	173.9	37.8	1.7	0.094
		7:37:28	55	7.56	83.5	10	6.64	-15.5	174.1	37.6	0.8	0.094
		7:36:36	60	7.28	82.2	9.91	6.64	-15.7	174.5	37.6	1.1	0.094
Secchi		7:35:30	65	7.1	81.6	9.87	6.64	-16.1	174.5	37.5	1.2	0.094
2.87 M		7:34:41	70	6.91	80.5	9.79	6.65	-16.5	174.6	37.5	1.4	0.094
		7:33:47	75	6.71	79.9	9.77	6.67	-17.2	174.2	37.4	2.2	0.094
		7:32:43	80	6.56	77.6	9.52	6.68	-18.1	174.1	37.5	2.1	0.094
		7:31:47	85	6.41	76.6	9.43	6.7	-19.3	173.3	37.5	1.5	0.094
		7:30:37	90	6.27	73.8	9.12	6.69	-18.8	174.7	37.5	1.4	0.094
		7:29:41	95	6.15	71.2	8.83	6.71	-19.7	174.8	37.4	1.5	0.094
		7:28:33	100	6.03	67.6	8.41	6.75	-21.7	174.1	37.3	1.5	0.094
		7:27:43	105	5.93	64.5	8.04	6.78	-23.7	173.6	37.3	1.5	0.094
		7:26:56	110	5.92	63.1	7.87	6.82	-26.1	172.4	37.3	1.6	0.094
		7:25:57	115	5.88	61.6	7.69	6.88	-29	170.8	37.4	2	0.094
		7:25:12	120	5.88	60.5	7.56	6.93	-31.8	169.2	37.2	1.5	0.095
		7:23:12	125	5.82	51.5	6.44	7.09	-40.7	163.7	55.2	4.3	0.095
		8:36:10	0.5	24.71	120	10	8.31	-112.7	58.6	33.3	3.3	0.05
		8:35:00	5	24.72	121	10.04	8.25	-108.8	60.2	33.3	2.2	0.089
		8:33:56	10	24.71	120	10	8.14	-102.9	63	33.5	2.5	0.089
		8:32:26 8:30:23	15 20	24.64 22.18	121 132	10.03	7.97	-92.6	69.5	33.6	3.7	0.089
		8:28:32	20 25	19.93	75	11.49 6.83	7.69 6.92	-75.7 -31.3	74 117.3	34.1 34.3	5.4 4.7	0.093
		8:26:07	30	19.93	69.3	6.45	6.87	-28.3	122.5	34.3	2.4	0.094
BZ-6		8:24:32		18.09			6.86		122.5		2.4	0.095
In-Lake		8:22:43	40	16.94	70.4	6.81	6.85	-27.5	129.6	34.5	2.6	0.098
Tower	7/23/2015		40	15.9	70.4	6.94	6.85	-27.2	132.2	34.5	2.3	0.097
101101	.,20,2010	8:18:48	50	13.2	62.2	6.52	6.87	-28.6	136.3	34.7	1.7	0.096
		8:15:55	55	9.9	78.9	8.92	6.98	-34.4	136.4	34.7	1	0.097
Secchi		8:14:59	60	8.34	76.7	9.01	7	-35.6	137.7	34.4	1.8	0.097
3.44 M		8:13:49	65	7.99	78.8	9.34	7.03	-37.5	137.1	34.4	1.5	0.097
		8:12:30	70	7.68	81	9.66	7.07	-39.3	136.2	34.4	1.6	0.096
		8:11:31	75	7.46	79.9	9.59	7.09	-40.5	136.2	34.4	1.2	0.096
		8:10:49	80	7.32	80.2	9.65	7.11	-41.6	135.6	34.3	1.3	0.096
		8:08:58	85	7.2	79.1	9.56	7.15	-43.9	134.6	34.5	1.7	0.096
		8:08:07	90	7.06	78.8	9.55	7.17	-45.2	133.9	34.4	1.6	0.096
		8:06:28	95	6.88	75.8	9.23	7.21	-47.3	133.4	34.3	1.6	0.096
		8:04:59	100	6.67	70	8.57	7.25	-49.5	133.1	34.4	1.1	0.097
		8:03:34	105	6.54	66.5	8.16	7.3	-52.3	132.4	40.5	3.1	0.097
		8:00:58	110	6.38	58.9	7.26	7.39	-57.2	131.3	34.6	1	0.097
		8:00:13	115	6.39	57.9	7.13	7.43	-59.6	130	45.2	2.1	0.098
		7:58:49	120	6.38	57.5	7.08	7.51	-63.7	128.4	79.6	4.7	0.098
		7:57:46	125	6.49	57.7	7.09	7.58	-67.7	126.4	43.3	1.7	0.099

Station	Date	Time	Depth	Temp	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
		8:21:28	0.5	24.3	104	8.68	7.63	-72.9	62	38.2	2.5	0.104
		8:20:46	5	24.34	104	8.66	7.54	-67.1	63.4	38.2	3.4	0.104
		8:20:08	10	24.33	103	8.6	7.41	-59.7	65.8	38.4	4	0.104
		8:19:19	15	24.29	102	8.51	7.21	-47.8	70.2	38.7	3.5	0.104
		8:18:20	20	23.81	89.9	7.59	6.95	-32.6	93.2	38.8	2.7	0.106
		8:16:42	25	22.02	74.6	6.52	6.81	-24.7	103.4	38.4	4.3	0.111
		8:15:33	30	21.07	57.6	5.13	6.75	-21.2	108.6	38.2	1.6	0.114
BZ-6		8:13:54	35	20.19	46	4.17	6.7	-18.5	113.5	38.3	1.6	0.116
In-Lake		8:12:57	40	19.33	41.8	3.85	6.7	-18.2	116.4	38.4	2.1	0.117
Tower		8:11:51	45	18.44	46.3	4.34	6.71	-18.8	117.9	38.4	1.2	0.12
	8/13/2015	8:10:32	50	17.22	48.4	4.66	6.71	-19.4	120.2	38.6	2.2	0.121
		8:09:26	55	14.14	43	4.42	6.72	-20	124.4	38.7	1.2	0.117
Secchi		8:08:11	60	10.95	45.3	5	6.74	-21.3	128	38.3	2	0.119
3.30 M		8:07:03	65	9.27	51	5.86	6.78	-23.6	128.8	38.3	1.2	0.119
		8:05:33	70	8.45	60.2	7.05	6.84	-27	128	38.3	1.8	0.12
		8:04:21	75	7.88	65.4	7.76	6.88	-29	127.2	38.3	1.3	0.12
		8:03:23	80	7.51	66.8	8.01	6.9	-30.1	126.9	38.4	1.1	0.12
		8:02:21	85	7.32	67.1	8.08	6.92	-31	126.7	38.4	1.7	0.12
		8:01:15	90	7.17	64.8	7.83	6.93	-31.8	126.9	38.2	1	0.121
		8:00:22	95	7.02	62.4	7.57	6.94	-32.6	127	38.3	1.4	0.121
		7:59:25	100	6.88	58.6	7.13	6.98	-34.5	126.2	38.3	1.8	0.121
		7:57:37	105	6.72	50.6	6.19	7.02	-36.7	126.3	38.3	1.2	0.122
		7:56:30	110	6.58	44.7	5.48	7.06	-38.9	126.1	38.4	1.8	0.123
		7:55:14	115	6.5	40.7	5.01	7.12	-42.6	124.6	38.5	1.5	0.124
		7:54:09	120	6.49	38.6	4.74	7.2	-46.6	122.3	38.5	0.9	0.125
L	L!	7:52:56	125	6.53	37.4	4.59	7.3	-52.1	118.1	38.8	0.6	0.127
		9:08:49	0.5	24.45	110	9.14	7.72	-78.1	52.5	38	2.7	0.106
		9:07:57	5	24.37	109	9.12	7.6	-70.7	53.8	38.1	3.6	0.106
		9:07:02	10	24.34	109	9.07	7.44	-61.2	56.2	38.1	4.8	0.106
		9:06:09	15	24.25	107	8.98	7.17	-45.7	57.6	38.2	4.5	0.106
		9:05:20	20	24.08	102	8.6	6.93	-31.6	68.9	38.4	5.6	0.106
		9:03:09	25	22.58	69.7	6.02	6.56	-9.8	99.6	37.7	3.5	0.113
		9:00:59	30	21.59	43.4	3.83	6.41	-1.4	106.7	37.7	1.9	0.117
BZ-6		8:59:38	35	20.75			6.35		111.1	37.5	1.7	0.119
In-Lake		8:58:17	40	20.18	28.8	2.61	6.32	3.6	114.5	37.6	2.9	0.12
Tower		8:56:55	45	19.61	27.2	2.49	6.29	5.1	118.5	37.8	0.8	0.121
		8:55:14	50	18.26	33	3.11	6.25	7.2	123.9	37.9	1.8	0.123
Secchi	8/31/2015	8:54:00	55	16.32	33.5	3.28	6.19	10.5	130.5	38.2	1.8	0.126
3.05 M		8:50:53	60	13.94	33.9	3.5	6.16	12	137.9	38.2	1.6	0.126
1		8:49:38	65	10.45	39.6	4.43	6.14	12.6	142.3	38	1.8	0.127
		8:48:02	70	8.99	48.7	5.63	6.23	7.2	139.3	37.9	2.1	0.128
		8:46:08	75	8.03	59.6	7.06	6.3	3.3	136.7	37.7	1	0.129
		8:44:57	80	7.69	61.2	7.3	6.35	0.3	134	38	1.3	0.129
		8:43:54	85	7.45	62.1	7.45	6.36	-0.3	133.5	37.9	1.5	0.129
		8:42:34	90	7.25	62.4	7.52	6.37	-0.7	133.1	37.9	1	0.13
		8:40:58	95 100	7.15	59.4	7.19	6.36	-0.2	133.3	37.9	1.4	0.131
		8:39:28	100	6.98	54.9	6.66	6.34	0.5	133.9	37.8	1.7	0.133
		8:38:11	105	6.9	50.4	6.13	6.34	0.6	133.3	38	1.6	0.135
		8:36:54	110	6.76	42.5	5.19	6.35	0.1	132.5	38.2	1.9	0.137
		8:35:41	115	6.61	36.2	4.44	6.38	-1.5	130.9	38.3	1.9	0.138
		8:33:54	120	6.58	33	4.05	6.45	-5.2	123.4	38.5	2.2	0.14
	<u> </u>	8:32:18	125	6.53	28.1	3.45	6.5	-8.3	114.3	42.7	2.7	0.142

Station	Date	Time	Depth	Temn	DO	DO	pН	pHmV	ORP	Turbidity	Chloro.	SpCond
otation	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
	111/10/1			Ū	70	iiig/E				NIU	ug/E	morem
		8:39:43	0.5	19.5	108	9.94	7.69	-75.7	163.9	34.7	4.6	0.106
		8:38:30	5	19.65	108	9.94	7.09	-63	166.1	34.7	9.4	0.100
		8:37:52	10	19.55	107	9.83	7.31	-53.8	167.7	34.8	9.4	0.174
BZ-7		8:37:07	15	18.47	107	9.56	7.16	-44.9	181	35.3	13.3	0.173
Upper Lake		8:35:56	20	15.81	88.5	8.77	7.05	-38.8	192.8	37.7	8.3	0.183
No-Wake	6/4/2015	8:34:47	25	11.84	80.5	8.71	7.07	-39.6	199.9	35.6	3.4	0.183
ite traite	0, 1,2010	8:33:40	30	8.95	80.5	9.31	7.13	-43.2	202.1	33.8	3.1	0.187
		8:32:40	35	8.29	79.2	9.31	7.18	-45.9	202.5	33.7	3.3	0.19
		8:31:43	40	7.74	78.8	9.38	7.23	-48.7	202.5	33.5	2.7	0.193
		8:30:30	45	7.51	78.7	9.42	7.3	-52.3	202.4	33.1	1.7	0.195
		8:29:21	50	7.38	78.5	9.43	7.37	-56.4	202	33.2	1.9	0.196
		8:27:51	55	7.32	78.8	9.48	7.48	-62.1	201.7	32.4	1.5	0.2
		8:54:23	0.5	21.53	95.4	8.41	7.02	-36.7	131.3	38	1.8	0.093
		8:53:53	5	21.51	94.9	8.37	6.97	-34.1	132.6	38	3.1	0.093
		8:52:40	10	21.31	90	7.97	6.86	-27.4	139.2	38.7	2.9	0.093
BZ-7		8:52:08	15	20.77	89	7.97	6.89	-29.2	138.5	42.9	2.5	0.072
Upper Lake		8:51:06	20	19.07	88	8.15	6.77	-22.3	145.3	67	4	0.09
No-Wake	7/1/2015	8:50:14	25	17.82	86.7	8.23	6.74	-20.9	147.6	82.8	5.9	0.08
		8:48:45	30	16.78	84.1	8.16	6.69	-18.1	148.6	91.9	6.3	0.079
		8:46:37	35	16.59	81.9	7.99	6.63	-14.4	145.9	94.8	6.1	0.083
		8:45:51	40	15.76	77.8	7.72	6.59	-12.4	144.1	87	5.3	0.086
		8:44:27	45	12.96	60.5	6.38	6.51	-8.2	144.4	40.4	2.5	0.1
		8:43:17	50	8.16	57.2	6.75	6.52	-9.2	140.5	39.3	1.5	0.096
		8:40:19	55	7.98	3.4	0.4	6.5	-8	94.8	38.8	4.7	0.095
		9:43:18	0.5	26.13	106	8.53	7.72	-78.5	80.9	33.3	2.3	0.074
		9:42:25 9:41:36	5 10	26.14 26.06	106 105	8.57 8.53	7.65 7.59	-74.1 -70.8	83.7 84.9	33.5 33.8	1.8	0.074 0.075
		9:39:28	15	20.00	98.1	8.55	7.39	-70.8	106.6	33.0 34.4	2.9 2	0.075
BZ-7		9:39:20	20	20.53	88	7.92	7.27	-51.5	112	34.7	1.6	0.103
Upper Lake	7/23/2015	9:36:59	25	19.34	82.3	7.58	7.26	-50.6	115.5	34.6	0.5	0.100
No-Wake	1/20/2010	9:36:16	30	18.63	79.7	7.45	7.27	-51.2	116.6	34.5	1.9	0.099
		9:35:40	35	18.03	76.5	7.23	7.29	-52.2	117.2	34.3	1.4	0.000
		9:34:47	40	17.53	73	6.98	7.32	-54.1	117.6	34.1	2.1	0.101
		9:33:41	45	16.72	66.8	6.49	7.38	-57.2	118.6	34.3	2.1	0.102
		9:32:19	50	15.11	55.7	5.6	7.47	-62.5	119.4	34.3	2.3	0.102
		9:30:44	55	10.65	48.4	5.39	7.63	-71.1	120.6	33.2	1.6	0.101
		9:15:06	0.5	24.51	107	8.9	8.1	-100.5	64.5	38.8	5.2	0.062
		9:14:22	5	24.54	107	8.89	8.06	-97.8	63	38.7	5.3	0.097
		9:13:29	10	24.52	106	8.85	7.91	-89.1	66.1	38.8	6	0.098
		9:12:33	15	24.5	105	8.77	7.64	-73.2	70.3	39	6.2	0.098
		9:11:05	20	23.36	91.1	7.76	7.27	-51.6	95.7	38.9	2.9	0.069
BZ-7	8/13/2015	9:10:06	25	21.26	87.4	7.75	7.13	-43.5	100.5	40.9	5.8	0.111
Upper Lake		9:09:10	30	20.61	80.1	7.2	7.1	-41.5	103.1	41	4.9	0.115
No-Wake		9:08:14	35	19.93	74.3	6.76	7.09	-41	103.8	40.3	2.2	0.117
		9:07:12	40	19.56	65.4	6	7.1	-41.6	104	40.5	1.8	0.118
		9:05:48	45	18.59	41.4	3.87	7.15	-44	103.4	39.1	1.6	0.123
		9:04:45	50	17.99	35.7	3.38	7.24	-49.6	91.5	39.9	4.1	0.123
L	L	L	L	·		L	L		I			╘━━━┛

Station	Date	Time	Depth	Temp	DO	DO	рΗ	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	С	%	mg/L		mV	mV	NTU	ug/L	mS/cm
		10:19:20	0.5	25.2	111	9.16	8.07	-98.8	54.6	38	3.7	0.102
		10:18:37	5	25.15	111	9.14	7.94	-91.2	54.7	38.2	5.3	0.102
		10:17:17	10	25.1	109	9	7.62	-72	57.5	38.3	5.6	0.102
		10:16:11	15	24.56	92.5	7.71	7.12	-42.5	89.8	38.4	4.6	0.099
		10:15:16	20	23.1	77.7	6.65	7.07	-39.7	96	38.1	3.7	0.103
BZ-7		10:14:25	25	21.8	81.4	7.14	7.04	-37.8	95.7	38.2	2.3	0.119
Upper Lake	8/31/2015	10:13:12	30	21.05	81.7	7.27	7.01	-36.3	95.2	38.4	1.8	0.122
No-Wake		10:12:14	35	20.47	78.3	7.05	7	-35.5	93.8	38.6	1.9	0.123
		10:11:12	40	19.99	55.9	5.08	6.95	-33.1	95.6	38.6	2.2	0.123
		10:10:33	45	19.14	31.5	2.91	6.96	-33.4	97.4	38.2	1.2	0.123
		10:09:30	50	18.34	23.6	2.22	7.04	-38.1	91.2	38.2	2	0.124
		10:08:07	55	17.07	14.3	1.38	7.19	-46.8	77.3	43	0.5	0.127

APPENDIX B

LABORATORY CUSTODY SHEETS



M.J. Reider Associates, Inc. ENVIRONMENTAL TESTING LABORATORY U.S. EPA/PA DEP #06-00003

107 ANGELICA STREET
READING, PA 19611 WWW.MJREIDER.COM (610) 374-5129 FAX (610) 374-7234

Sold To: Accounts Payable Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201 Sample Description	INVOICE NO. 3252 Date 06/15 Acct. No. 03157 P.O. No. 11157 Receipt No. C of C No. 25758 Contact Richa Wheel	5/15 43 0 8 .rd .er
15 0020176 WA-1 Surface 15 0020177 WA-2 Surface 15 0020179 WA-2 Deep 15 0020179 WA-2 Deep 15 0020179 WA-2 Deep 15 0020180 WA-3 Surface 15 0020181 WA-4 Surface 15 0020182 WA-5 Surface 15 0020182 WA-6 Surface 15 0020183 WA-6 Duepth 15 0020185 WA-6 Deep 15 0020186 WA-7 Surface 15 0020186 WA-7 Surface 15 0020187 WA-7 Mid-Depth 15 0020552 PR-1 Surface 15 0020555 PR-2 Duepth 15 0020555 PR-2 Duepth 15 0020556 PR-3 Surface 15 0020570 BZ-1 Surface 15 0020571 BZ-3 Surface <td></td> <td>$\begin{array}{c} 254.00\\ 254.00\\ 194.00\\ 194.00\\ 254.00\\ 254.00\\ 254.00\\ 254.00\\ 194.00\\ 194.00\\ 254.00\\ 194.00\\ 254.00\\ 194.00\\ 254.00\\ 194.00\\ 254.00\\ 194.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\$</td>		$\begin{array}{c} 254.00\\ 254.00\\ 194.00\\ 194.00\\ 254.00\\ 254.00\\ 254.00\\ 254.00\\ 194.00\\ 194.00\\ 254.00\\ 194.00\\ 254.00\\ 194.00\\ 254.00\\ 194.00\\ 254.00\\ 194.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\ 256.00\\$

Remit To:

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

INVOICE NO.\$	325258
Date	06/15/2015
Acct. No.	3157
Amount Due \$	0.00

M. J. REIDER ASSOCIATES, INC. 107 Angelica St. Reading, PA 19611



107 ANGELICA STREET 🗆 READING, PA 19611 🗆 WWW.MJREIDER.COM (610) 374-5129 FAX (610) 374-7234

	1320 Nor	ch (Beltzville Dam) th Courthouse Rd., Ste. n VA 22201	600	INVOICE NO. Date Acct. No. P.O. No. Receipt No. C of C No. Contact	325258 06/15/15 03157 1115743 0 257590 Richard Wheeler	
						Price
15 002 15 002	0578 BZ-6 0579 BZ-6	Mid-Depth Deep				194.00
		Surface				194.00
		Mid-Depth				254.00
	0582 BZ-7	Deep				194.00
		TCCF				194.00

Analytical

7,676.00

Due Date: 07/15/2015

1.5% PER MONTH SURCHARGE WILL BE APPLIED TO INVOICES NOT PAID IN 30 DAYS

Remit To:

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

INVOICE NO.\$	325258
Date	06/15/2015
Acct. No.	3157
Amount Due \$	7676.00

M. J. REIDER ASSOCIATES, INC. 107 Angelica St. Reading, PA 19611





Attention: David Wertz					Date of F	eport:	06/15	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-002057
1320 North Courthouse Rd., S	te. 600							
Arlington VA 22201					Date Coll	ected:	06/04	/15 06:30
					Collected	By:	Clier	it
Sample Desc: BZ-1 Surface					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	54	/100mL	2	1	SM 9222D	06/04	16:25	RES
Total Coliform	410	mpn/100ml	1	1	SM 9223B		11:45	
CHEMISTRY		1.4.1.1.1						
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	06/05	14:55	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	06/08	12:15	HRG
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	- 12 C	12:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	06/04	16:19	JCL
Nitrogen, Nitrate	0.67	mg/L	.05	1	EPA 353.2	06/04	18:42	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/04	17:03	JCL
Nitrogen, Total Kjeldahl	0.44	mg/l	.25	1	EPA 351.2	06/08	16:14	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	1.5	mg/l	1	1	SM5310 C	06/09	12:12	ALD
RESIDUES								
Solids, Total Dissolved	32	mg/l	5	1	SM 2540C	06/08	13:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/08	13:30	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	10	mg/L	1	1	SM 2320 B	06/05	15:15	HRG

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by: Richard Wheeler

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NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.







Attention:	David Wertz					Date of F	eport:	06/15	5/15	
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	, 7-15-0020570	С
	1320 North Courthouse Rd., Ste.	600								
	Arlington VA 22201					Date Coll	ected:	06/04	4/15 06:30	
						Collected	By:	Clier	nt	
Sample Desc:	BZ-1 Surface					Date Rece	ived:	06/04	4/15 14:45	
PWSID: 31308	43			Rep	Dilutn		Test	Test		
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst	
							_			

O1 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 06/04/15 at 17:30.

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by: uln

Richard Wheeler

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Attention: David Wertz Reported To: Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600						Date of Report: Lab ID:		/15 -15-0020571
Arlington VA 22201					Date Coll Collected		06/03 Clier	5/15 10:25 it
Sample Desc: BZ-2 Surface					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI	Pecessia.						التعايين	
MICROBIOLOGY								
Fecal Coliform	2	/100m L	2	1	SM 9222D	06/04	16:25	RES
Total Coliform	1100	mpn/100mL	1	1	SM 9223B		11:45	
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/05	15:00	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	06/08	12:15	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	06/05	12:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	06/04	16:34	JCL
Nitrogen, Nitrate	0.21	mg/l	.05	1	EPA 353.2	06/04	18:47	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	06/04	17:08	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	06/08	16:17	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	<1	mg/l	1	1	SM5310 C	06/09	13:00	ALD
RESIDUES								
Solids, Total Dissolved	46	mg/l	5	1	SM 2540C	06/08	13:30	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/08	13:30	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	8	mg/L	1	1	SM 2320 B	06/05	15:15	HRG

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Attention:	David Wertz					Date of R	eport:	06/15	5/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0020571
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	06/03	3/15 10:25
						Collected	By:	Clier	nt
Sample Desc:	BZ-2 Surface					Date Rece	ived:	06/04	4/15 14:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

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 06/04/15 at 17:30.

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Attention: David Wertz Reported To: Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., S	Sto 600				Date of R Lab ID:	eport:	06/15 3157	/15 -15-0020572
Arlington VA 22201	Ste. 600				Date Coll Collected		06/04 Clien	/15 09:25 t
Sample Desc: BZ-3 Surface					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI	202000000							
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	06/04	16:25	RES
Total Coliform	28	mpn/100mL	1	1	SM 9223B	06/05	11:45	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	06/05	15:00	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	12:15	HRG
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	06/05	12:00	HRG
NITROGENS						1.100		
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/04	16:48	JCL
Nitrogen, Nitrate	0.62	mg/L	.05	1	EPA 353.2	06/04	18:48	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	06/04	17:09	JCL
Nitrogen, Total Kjeldahl	0.37	mg/l	.25	1	EPA 351.2	06/08	16:18	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	1.3	mg/l	1	1	SM5310 C	06/09	13:51	ALD
RESIDUES								
Solids, Total Dissolved	48	mg/l	5	1	SM 2540C	06/08	13:30	ТМН
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	06/08	13:30	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	06/05	15:30	HRG

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Attention:	David Wertz					Date of F	eport:	06/15	5/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0020572
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	06/04	4/15 09:25
						Collected	By:	Clier	nt
Sample Desc:	BZ-3 Surface					Date Rece	ived:	06/04	4/15 14:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

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 06/04/15at 17:30.

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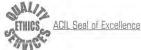
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				Date of R	eport:	06/15	/15
				Lab ID:		3157	-15-002057
te. 600							
				Date Coll	ected:	06/04	/15 08:25
				Collected	By:	Clien	• · · · · · · · · · · · · · · · · · · ·
				Date Received:		06/04/15 14:	
		Rep	Dilutn		Test	Test	
Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
<.01	mg/L	.01	1	SM 4500P-E	06/05	15:00	HRG
<.05		.05	1	SM 4500P-E	06/08	12:15	HRG
<.01	mg/L	.01	1	SM 4500P-E	06/05	12:00	HRG
<.05	mg/L	.05	1	D6919-03	06/04	17:03	JCL
0.72	mg/L	.05	1	EPA 353.2	06/04	18:49	JCL
<.05	mg/L	.05	1	EPA 353.2	06/04	17:10	JCL
0.25	mg/l	.25	1	EPA 351.2	06/08	16:19	JCL
-						12020	
			1.2				EMW
1.2	mg/l	1	1	SM5310 C	06/09	14:07	ALD
		2	1.2			10.00	atta da
							ТМН
<5	mg/l	3	1	SM 2540D	06/08	13:30	TMH
	<.01 <.05 <.01 <.05 0.72 <.05	Result Unit <.01	Result Unit Limit <.01	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Lab ID: Lab ID: Lab ID: Date Coll Collected Date Rece Result Unit Result Unit Unit Unit Coll mg/l .01 1 SM 4500P-E .05 mg/l .05 1 SM 4500P-E .01 mg/l .05 1 SM 4500P-E .01 mg/l .05 1 SM 4500P-E .01 mg/l .05 1 D6919-03 0.72 mg/l .05 1 EPA 353.2 .05 mg/l .05 1 EPA 353.2 .025 mg/l .25 1 EPA 351.2 .25 1 EPA 351.2 .25 1 EPA 351.2 .25 1 SM 5210B 1.2 mg/l .5 1 SM 5210B .2 mg/l .5 1 SM 2540C	te. 600 Date Collected: Collected By: Date Received: Date Received: Result Unit Rep Limit Dilutn Factor Test Procedure Date <.01	te. 600 Lab ID: 3157 Date Collected: 06/04 Collected By: Clier Date Received: 06/04 Result Unit Rep Dilutn Test Test <.01

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.

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Reviewed and Approved by:

Richard Wheeler

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Attention: David Wertz					Date of R	eport:	06/15	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0020574
1320 North Courthouse Rd., St	e. 600							
Arlington VA 22201					Date Coll	ected:	06/04	/15 08:25
					Collected	By:	Clien	t
Sample Desc: BZ-3 Deep					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.05	mg/l	.01	1	SM 4500P-E	06/05	15:00	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E			HRG
Phosphorus as P, Total	0.05	mg/l	.01	1	SM 4500P-E			HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	06/04	17:17	JCL
Nitrogen, Nitrate	0.69	mg/l	.05	1	EPA 353.2	06/04	18:50	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/04	17:11	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	1.	16:20	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	<1	mg/l	1	1	SM5310 C	06/09	14:54	ALD
RESIDUES								
Solids, Total Dissolved	42	mg/l	5	1	SM 2540C	06/08	13:30	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	0.00		ТМН
TITRATIONS		-,				1.00		
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	06/05	15:45	HRG

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.

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Attention: David Wertz					Date of R	onent.	06/15	115
	ported To: Tetra Tech (Beltzville Dam)						06/15/15 3157-15-002057	
1320 North Courthouse Rd., S	sta 600				Lab ID:		5157	-15-002057
Arlington VA 22201	ite. 000				Date Coll	a at a d a	04/04	145 40.45
A Chigeon VA 22201					Collected		Clier	/15 10:15
					corrected	Бу.	ctier	
Sample Desc: BZ-4 Surface					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	15	/100mL	2	1	SM 9222D	06/04	16:25	RES
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	06/05	11:45	PLW
CHEMISTRY						1.5		
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	06/05	15:00	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	06/08	12:20	HRG
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	06/05	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	06/04	17:32	JCL
Nitrogen, Nitrate	0.66	mg/l	.05	1	EPA 353.2	06/04	18:51	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	06/04	17:12	JCL
Nitrogen, Total Kjeldahl	0.28	mg/L	.25	1	EPA 351.2	06/08	16:21	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	<1	mg/l	1	1	SM5310 C	06/09	15:24	ALD
RESIDUES								
Solids, Total Dissolved	30	mg/l	5	1	SM 2540C	06/08	13:30	ТМН
Solids, Total Suspended	10	mg/l	3	1	SM 2540D	06/08	13:45	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	9	mg/L	1	1	SM 2320 B	06/05	15:45	HRG

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BORATORY 107 ANGELICA STR





Attention:	David Wertz					Date of F	Report:	06/15	5/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0020575
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	.ected:	06/04	4/15 10:15
						Collected	By:	Clier	nt
Sample Desc:	BZ-4 Surface					Date Rece	eived:	06/04	4/15 14:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

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 06/04/15 at 17:30.

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Attention: David Wertz					Date of R	eport:	06/15	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0020576
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	06/04	/15 09:50
					Collected	By:	Clier	nt
Sample Desc: BZ-5 Surface					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	260	/100mL	2	1	SM 9222D	06/04	16:25	RES
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B		11:45	PLW
CHEMISTRY		11000						
COLORMETRIC								
Phosphate as P, Ortho	0.15	mg/l	.01	1	SM 4500P-E	06/05	15:05	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	1.1.2.1.1.1.	12:20	HRG
Phosphorus as P, Total	0.31	mg/l	.01	1	SM 4500P-E	06/05	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/04	17:47	JCL
Nitrogen, Nitrate	1.13	mg/l	.05	1	EPA 353.2	06/04	18:52	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	06/04	17:13	JCL
Nitrogen, Total Kjeldahl	1.52	mg/l	.25	1	EPA 351.2	06/08	16:24	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/l	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	2.0	mg/l	1	1	SM5310 C	06/09	15:42	ALD
RESIDUES								
Solids, Total Dissolved	75	mg/l	5	1	SM 2540C	06/08	13:30	тмн
Solids, Total Suspended	309	mg/L	3	1	SM 2540D	06/08	13:45	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	14	mg/L	1	1	SM 2320 B	06/05	16:00	HRG

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Attention:	David Wertz					Date of F	Report:	06/15	5/15	
Reported To:	Tetra Tech (Beltzville Dam)	200				Lab ID:			7-15-0020576	5
	1320 North Courthouse Rd., Ste. 6 Arlington VA 22201	500				Date Coll Collected		06/04 Clier	4/15 09:50 nt	
Sample Desc:	BZ-5 Surface					Date Rece	eived:	06/04	4/15 14:45	
PWSID: 31308	43			Rep	Dilutn		Test	Test		
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst	
							-	-		

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 06/04/15 at 17:30.
- 03 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.

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Attention: David Wertz					Date of R	eport:	06/15	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			7-15-002057
1320 North Courthouse Rd., S	ite. 600							15 002051
Arlington VA 22201					Date Coll	ected:	06/04	/15 07:55
					Collected		Clier	
Sample Desc: BZ-6 Surface					Date Rece	ived:	06/04	/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI	(<u></u>							
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	06/04	16:25	RES
Total Coliform	56	mpn/100ml	1	1	SM 9223B	1.1.1.1.1.1.1.1	11:45	
CHEMISTRY		and a second			and the second second	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/05	15:05	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E			HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E			
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/04	18:45	JCL
Nitrogen, Nitrate	0.62	mg/l	.05	1	EPA 353.2		18:53	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2		17:14	
Nitrogen, Total Kjeldahl	0.40	mg/L	.25	1	EPA 351.2		16:25	
OTHER						1.00		
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	1.3	mg/L	1	1	SM5310 C			ALD
RESIDUES								
Solids, Total Dissolved	48	mg/L	5	1	SM 2540C	06/08	13:30	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/08	13:45	
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	06/05	16:00	HRG

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Attention:	David Wertz					Date of R	eport:	06/15	5/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:	0.7	3157	7-15-0020577
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	06/04	4/15 07:55
						Collected	By:	Clier	nt
Sample Desc:	BZ-6 Surface					Date Rece	eived:	06/04	4/15 14:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

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 06/04/15 at 17:30.

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Attention: David Wertz					Date of F	eport:	06/15	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		- 0. S. S.	-15-00205
1320 North Courthouse Rd., S	te. 600							
Arlington VA 22201					Date Coll	ected:	06/04	/15 07:55
					Collected	By:	Clier	
Sample Desc: BZ-6 Mid-Depth					Date Rece	eived:	06/04	/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY	(
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/05	15:05	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E		12:20	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E			HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	06/04	19:00	JCL
Nitrogen, Nitrate	0.72	mg/L	.05	1	EPA 353.2	1.000	18:54	
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2		17:15	JCL
Nitrogen, Total Kjeldahl	0.28	mg/L	.25	1	EPA 351.2	06/08	16:26	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	06/09	17:32	ALD
RESIDUES								
Solids, Total Dissolved	63	mg/L	5	1	SM 2540C	06/08	13:30	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/08	13:45	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	06/05	16:00	HRG

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.

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Attention: David Wertz					Date of F	enort.	06/15	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	cepor e.	- C. S. S. S. S.	7-15-002057
1320 North Courthouse Rd.,					200 10.		5151	15 002051
Arlington VA 22201	0.126 (0.12)				Date Coll	ected.	06/04	4/15 07:55
					Collected		Clier	
					corrected		cerer	
Sample Desc: BZ-6 Deep					Date Rece	eived:	06/04	4/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/05	15:05	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E		12:20	HRG
Phosphorus as P, Total	1.40	mg/L	.01	1	SM 4500P-E	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
NITROGENS		-				1		
Nitrogen, Ammonia	0.05	mg/l	.05	1	D6919-03	06/04	19:14	JCL
Nitrogen, Nitrate	0.65	mg/L	.05	1	EPA 353.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18:55	
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/04	17:16	JCL
Nitrogen, Total Kjeldahl	1.79	mg/l	.25	1	EPA 351.2		16:27	
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	1.6	mg/l	1	1	SM5310 C	06/09	17:49	ALD
RESIDUES								
Solids, Total Dissolved	56	mg/L	5	1	SM 2540C	06/08	13:30	ТМН
Solids, Total Suspended	51	mg/L	3	1	SM 2540D	and the second s	13:45	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	10	mg/L	1	1	SM 2320 B	06/09	11:15	HRG

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.

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Date of Lab ID: Date Col Collecte Date Rec .utn ctor Procedure	lected: d By:	06/04 Clien	7-15-002058 4/15 08:55
Collecte Date Rec .utn	ed By: eeived: Test	Clien 06/04 Test	nt
Collecte Date Rec .utn	ed By: eeived: Test	Clien 06/04 Test	nt
Date Rec	eived: Test	06/04 Test	
utn	Test	Test	¥/15 14:45
tor Procedure	Date	Time	
			Analyst
SM 9222D	06/04	16:30	RES
SM 9223B	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11:45	
	10.1		
SM 4500P-E	06/05	15:05	HRG
			HRG
SM 4500P-E	06/05	12:10	HRG
D6919-03	06/04	19:29	JCL
EPA 353.2	06/04	18:56	JCL
EPA 353.2	06/04		JCL
EPA 351.2	06/08	16:28	JCL
SM 5210B	06/05	13:30	EMW
SM5310 C	06/09	18:06	ALD
SM 2540C	06/08	13:55	ТМН
SM 2540D			
	1.00	101.03	2000
	06/09	. Charlense	
	SM 4500P-E SM 4500P-E D6919-03 EPA 353.2 EPA 353.2 EPA 351.2 SM 5210B SM5310 C	SM 4500P-E 06/08 SM 4500P-E 06/05 D6919-03 06/04 EPA 353.2 06/04 EPA 353.2 06/04 EPA 351.2 06/08 SM 5210B 06/05 SM5310 06/09 SM 2540C 06/08 SM 2540D 06/08	SM 4500P-E 06/05 12:10 D6919-03 06/04 19:29 EPA 353.2 06/04 18:56 EPA 353.2 06/04 17:17 EPA 351.2 06/08 16:28 SM 5210B 06/05 13:30 SM5310 C 06/09 18:06 SM 2540C 06/08 13:55

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Attention:	David Wertz					Date of F	Report:	06/15	5/15	
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:			7-15-0020580	
	1320 North Courthouse Rd., Ste.	600								
	Arlington VA 22201					Date Coll	ected:	06/04	4/15 08:55	
						Collected	By:	Clier	nt	
Sample Desc:	BZ-7 Surface					Date Rece	eived:	06/04	4/15 14:45	
PWSID: 31308	43			Rep	Dilutn		Test	Test		
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst	
									Contraction of the second	

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 06/04/15 at 17:30.

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Attention: David Wertz					Date of F	Report:	06/15	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0020
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	06/04	/15 08:55
					Collected	By:	Clier	nt
Sample Desc: BZ-7 Mid-Depth					Date Rece	ived.	06 101	/15 14:45
					Date Rece	riveu.	00/04	12 14.4.
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
HEMISTRY			-					
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	06/05	15:10	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E		12:20	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	06/05	12:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/04	19:43	JCL
Nitrogen, Nitrate	0.72	mg/L	.05	1	EPA 353.2	06/04	18:59	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/04	17:20	JCL
Nitrogen, Total Kjeldahl OTHER	0.29	mg/l	.25	1	EPA 351.2	06/08		JCL
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	06/09	18:22	
RESIDUES		5,				/		
Solids, Total Dissolved	51	mg/L	5	1	SM 2540C	06/08	13:55	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/08	13:45	
TITRATIONS		-,				100	100.00	- 0 9 9
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	06/09	11:30	HRG

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 (Beltzville Dam)

Reviewed and Approved by: lulm

Richard Wheeler

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Attention: David Wertz					Date of F	Report:	06/15	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-002058
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	06/04	4/15 08:55
					Collected	By:	Clier	
Sample Desc: BZ-7 Deep					Date Rece	eived:	06/04	4/15 14:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
					Trodedure	Date	11116	Anatyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.07	mg/L	.01	1	SM 4500P-E	06/05	15:10	HRG
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E		12:20	HRG
Phosphorus as P, Total	0.30	mg/L	.01	1	SM 4500P-E			
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	06/04	19:58	JCL
Nitrogen, Nitrate	0.70	mg/L	.05	1	EPA 353.2	06/04	19:02	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	1 2 3 ⁴ 6 1 6	17:23	
Nitrogen, Total Kjeldahl	0.30	mg/L	.25	1	EPA 351.2	06/08	16:30	JCL
OTHER						1.0		
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/05	13:30	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	06/09	18:53	ALD
RESIDUES		-/						
Solids, Total Dissolved	59	mg/L	5	1	SM 2540C	06/08	13:55	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/08	13:45	тмн
TITRATIONS						10.1 6 .100	1	
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	06/09	12:10	HRG

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 (Beltzville Dam)

Reviewed and Approved by: Kulm

Richard Wheeler

Page 1 of 1

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7A 22201 Total Sampling Time (hours): 16 Ext: 16 Ext: 16 Ext: 16 Taboratory Bacaint Temp. 3 Dec C Tf	- 1 X	$\begin{array}{c} C = 1 \times \\ D = 1 \times \\ E = 1 \times \end{array}$			elinquished by: The Received by: Buy Mark Received for laboratory by: By /	3 Desc: BZ-3 Surface Mat thm, alk, tds, tss, po4-p, toc, a_{103-n} , d-po4-p, $o-po4$, bod, a_{203-n} , d-po4-p, $o-po4$, bod, a_{203-n} , d-po4-p, $o-po4$, bod, a_{203-n} , a_{203-n} , $a_$
(Beltzville Dam) Courthouse Rd., Ste.	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Total Sampling Time (hours):Bot Total Sampling Time (hours):Bot Laboratory Receipt Temp: 3 Deg C. If Jemp Unaccepta Approved By:ASW Deg C. 1 Desc: BZ-1 Surface Matrix: o tkn, alk, tds, tss, po4-p, toc, mo3-m, d-po4-p, body Matrix: body Matrix: o 2 Desc: BZ-2 Surface J. X Pt nb3 p. w/ Coo F = 1 X 250mlMicro p. w/ Matrix: o	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Total Sampling Time (hours):	Tetra Tech (Beltzville Dam) Arlington VA 2201 Total Sampling Time (hours): Bot 703-387-5516 Ext: Laboratory Receipt Temp: <u>3</u> Deg C. If Jemp Unaccepta Approved By: <u>Deg C. If Jemp Unaccepta</u> 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A- 1 X Pt nh3 p w/ H2SO C - 1 X Zambervog W (Cool C - 1 X Zambervog	Tetra Tech (Beltzville Dam) Arlington VA 2201 Selution Total Sampling Time (hours):	Tetra Tech (Beltzville Dam) Arlington VA 22201 For the section of the sectin of the section of the section of the section of the section of	Tetra Tech (Beltzville Dam) non-non-non-non-non-non-non-non-non-non
	703-387-5516 Ext: Total Sampling Time (hours): Bot 703-387-5516 Ext: Laboratory Receipt Temp: 3 Deg C. If Jemp Unaccepta 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-2 Surface Matrix: o 1 Desc: BZ-2 Surface Matrix: o 2 Desc: BZ-2 Surface Matrix: o	703-387-5516 Ext: Total Sampling Time (hours):	Total Sampling Time (hours): Bot 1 Desc: BZ-1 Surface tkn, alk, tds, tss, po4-p, toc, Approved By: 1 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, Matrix: o 1 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 1 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 1 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 1 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 1 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, 1 Desc: BZ-2 Surface 1 Desc, bod, bod, bod, bod, bod, bod, bod, bod	1 Desc: BZ-1 Surface Surface Active Matrix: 0 1 Desc: BZ-1 Surface Matrix: 0 1 Desc: BZ-2 Surface A-1 X pt nh3 p w/ H2S0 1 Desc: BZ-2 Surface A-1 X pt nh3 p w/ Coo 2 Desc: BZ-2 Surface A-1 X pt nh3 p w/ Coo 2 Desc: BZ-2 Surface A-1 X pt nh3 p w/ Coo 2 Desc: BZ-2 Surface A-1 X pt nh3 p w/ Coo 3 Desc: BZ-3 Surface Surface A-1 X pt nh3 p w/ Cool 3 Desc: BZ-3 Surface Matrix: o A-1 X pt nh3 p w/ Cool	Instruction Total Sampling Time (hours): Bot 1 Desc: B2-1 Surface Matrix: Nature 1 Desc: B2-1 Surface Matrix: Natrix: Natrix: 1 Desc: B2-2 Surface A 1 X Pt nh3 P W/ H230 2 Desc: B2-2 Surface Matrix: Natrix: Natrix: Natrix: 2 Desc: B2-3 Surface Matrix: Natrix: Natrix:<	Total Sampling Time (hours):
Laboratory Benefit Temp. 3 Deg C If Temp Inaccentable	1 Desc: BZ-1 Surface Matrix: o 2 Desc: BZ-2 Surface Matrix: o	1 Desc: BZ-1 Surface Matrix: o tkn, alk, tds, tss, po4-p, toc, A - 1 X Pt nh3 p w/ H2SO A - 1 X Pt nh3 p w/ H2SO mo3-n, d-po4-p, o-po4, body O-po4, body D - 1 X Soz Alk p w/ Cool z Desc: BZ-2 Surface E - 1 X 2xambervoa g w/ Cool z Desc: BZ-2 Surface Matrix: o zkn, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o	1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A - 1 X Pt nh3 p w/ H2SO tkn, alk, tds, tss, po4-p, toc, A - 1 X Det nh3 p w/ H2SO mo3-n, d-po4-p, o-po4, body D - 1 X L bod p w/ Cool 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, Matrix: o xhn, alk, tds, tss, po4-p, toc, Natrix: o xhn, alk, tds, tss, po4-p, toc, Natrix: o xhn alk, tak, tss, po4-p, toc, Natrix: o xhn alk, tak, tsss, po4-p, toc, Natrix pt ac <t< td=""><td>1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A - 1 X Pt nh3 p w/ H2SO 1 Desc: BZ-2 Surface B - 1 X 8canbervoa g w/ col 2 Desc: BZ-2 Surface Matrix: o 1 Desc: BZ-3 Surface Matrix: o 1 Desc: BZ-3 Surface A - 1 X Pt no3no2 p w/ col 2 Desc: BZ-2 Surface Matrix: o 1 Desc: BZ-3 Surface Matrix: o 3 Desc: BZ-3 Surface Matrix: o</td><td>1 Desc: BZ-1 Surface Matrix: o thm, alk, tds, tss, po4-p, toc, A - 1 X Pt nh3 p w/ H220 A - 1 X Pt nh3 p w/ H220 mo3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface E + no3no2 p w/ coll 2 Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o Matrix: Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Matrix: o Desc: BZ-3 Matrix: Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Matrix: o Desc: A - 1 X Pt nh3 p w/ H220 Matrix: Desc: BZ-3 Surface Matrix: o thm, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o Matrix: o B - 1 X E tod p w/ cool A - 1 X Pt nh3 p w/ H220 A - 1 X Pt nh3 p w/ H220 A - 1 X SonhMicro p w/ D - 1 X L tod p w/ cool E - 1 X E tod p w/ cool E - 1 X E tod p w/ cool E - 1 X E tod p w/ cool</td><td>1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A - 1 X Pt nh3 p w/ H2SO tkn, alk, tds, tss, po4-p, toc, B - 1 X Soz Alk p w/ Coo mo3-n, d-po4-p, o-po4, body Desc: BZ-2 Surface 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, F - 1 X Soz Alk p w/ Coo mo3-n, d-po4-p, o-po4, body Matrix: o no3-n, d-po4-p, o-po4, body Matrix: o r I X Soz Alk p w/ Coo z Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, Matrix: o mo3-n, d-po4-p, o-po4, body Matrix: o x I X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Zambervoa g w/ Coo B - 1 X Zambervoa g w/ Coo D - 1 X L bod p w/ Coo F - 1 X Z50mlMicro p w/ Coo F - 1 X Z50mlMicro p w/ Coo F - 1 X Z50mlMicro p w/ Coo F - 1 X Z50mlMicro p w/ Coo</td></t<>	1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A - 1 X Pt nh3 p w/ H2SO 1 Desc: BZ-2 Surface B - 1 X 8canbervoa g w/ col 2 Desc: BZ-2 Surface Matrix: o 1 Desc: BZ-3 Surface Matrix: o 1 Desc: BZ-3 Surface A - 1 X Pt no3no2 p w/ col 2 Desc: BZ-2 Surface Matrix: o 1 Desc: BZ-3 Surface Matrix: o 3 Desc: BZ-3 Surface Matrix: o	1 Desc: BZ-1 Surface Matrix: o thm, alk, tds, tss, po4-p, toc, A - 1 X Pt nh3 p w/ H220 A - 1 X Pt nh3 p w/ H220 mo3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface E + no3no2 p w/ coll 2 Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o Matrix: Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Matrix: o Desc: BZ-3 Matrix: Desc: BZ-3 Surface thm, alk, tds, tss, po4-p, toc, Matrix: o Desc: A - 1 X Pt nh3 p w/ H220 Matrix: Desc: BZ-3 Surface Matrix: o thm, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o Matrix: o B - 1 X E tod p w/ cool A - 1 X Pt nh3 p w/ H220 A - 1 X Pt nh3 p w/ H220 A - 1 X SonhMicro p w/ D - 1 X L tod p w/ cool E - 1 X E tod p w/ cool E - 1 X E tod p w/ cool E - 1 X E tod p w/ cool	1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A - 1 X Pt nh3 p w/ H2SO tkn, alk, tds, tss, po4-p, toc, B - 1 X Soz Alk p w/ Coo mo3-n, d-po4-p, o-po4, body Desc: BZ-2 Surface 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, F - 1 X Soz Alk p w/ Coo mo3-n, d-po4-p, o-po4, body Matrix: o no3-n, d-po4-p, o-po4, body Matrix: o r I X Soz Alk p w/ Coo z Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, Matrix: o mo3-n, d-po4-p, o-po4, body Matrix: o x I X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Soz Alk p w/ Coo B - 1 X Zambervoa g w/ Coo B - 1 X Zambervoa g w/ Coo D - 1 X L bod p w/ Coo F - 1 X Z50mlMicro p w/ Coo F - 1 X Z50mlMicro p w/ Coo F - 1 X Z50mlMicro p w/ Coo F - 1 X Z50mlMicro p w/ Coo
WACIK Approved By: USW Jump Discourse	tkn, alk, tds, tss, po4-p, toc, A - 1 X mo3-n, d-po4-p, o-po4, body B - 1 X 2 Desc: BZ-2 Surface	tkn, alk, tds, tss, po4-p, toc, A - 1 X mo3-n, d-po4-p, o-po4, bod B - 1 X 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, Mat	tkn, alk, tds, tss, po4-p, toc, A - 1 X no3-n, d-po4-p, o-po4, body B - 1 X 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, F - 1 X no3-n, d-po4-p, o-po4, body A - 1 X no3-n, d-po4-p, o-po4, body A - 1 X no3-n, d-po4-p, o-po4, body A - 1 X no3-n, d-po4-p, o-po4, body B - 1 X no3-n, d-po4-p, o-po4, body B - 1 X	tkn, alk, tds, tss, po4-p, toc, A - 1 X mo3-n, d-po4-p, o-po4, bod B - 1 X 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, E - 1 X no3-n, d-po4, bod F - 1 X no3-n, d-po4, bod A - 1 X and F - 1 X 2 Desc: BZ-2 Surface Mat A - 1 X and F - 1 X b - 1 X F - 1 X f - 1 X F - 1 X f - 1 X F - 1 X and F - 1 X	tkn, alk, tds, tss, po4-p, toc, A - 1 X no3-n, d-po4-p, o-po4, body B - 1 X 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, B - 1 X no3-n, d-po4-p, o-po4, body B - 1 X 3 Desc: BZ-3 Surface tkn, alk, tds, tss, po4-p, toc, C - 1 X 3 Desc: BZ-3 Surface tkn, alk, tds, tss, po4-p, toc, C - 1 X 03-n, d-po4-p, o-po4, body C - 1 X 1 C - 1 X 2 Desc: BZ-3 Surface tkn, alk, tds, tss, po4-p, toc, C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X 1 C - 1 X	tkn, alk, tds, tss, po4-p, toc, A - 1 X mo3-n, d-po4-p, o-po4, body C - 1 X 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, F - 1 X mo3-n, d-po4-p, o-po4, body A - 1 X mo3-n, d-po4-p, o-po4, body F - 1 X
Approved By: <u>S</u>	no3-n, d-po4-p, o-po4, body B - 1 x 2 Desc: BZ-2 Surface	MA -po4-p, o-po4, body B - 1 X D - po4, body D - 1 X D - 1 X E - 1 X P - 1 X F - 1 X P - 1 X F - 1 X P - 1 X F - 1 X P - 1 X F - 1 X P - 1 X F - 1 X P - 1 X F - 1 X P - 1 X F - 1 X Mat Mat tkm, alk, tds, tss, po4-p, toc, B - 1 X B - 1 X B - 1 X	<pre>mo3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface 2 Mat 2 mo3-n, d-po4-p, toc, 3 - 1 X 3 - 1</pre>	<pre>mo3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface 2 mat., alk, tds, tss, po4-p, toc, 3 Desc: BZ-3 Surface 3 Desc: BZ-3 Surface Mat</pre>	Mo3-m, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface tkm, alk, tds, tss, po4-p, toc, 3 Desc: BZ-3 Surface tkm, alk, tds, tss, po4-p, toc, 3 Desc: BZ-3 Surface tkm, alk, tds, tss, po4-p, toc, 6 -po4, body 1 X 2 - 1 X 3 Desc: BZ-3 Surface tkm, alk, tds, tss, po4-p, toc, 6 -po4, body 1 X 2 - 1 X	Mo3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface 2 Desc: BZ-2 Surface thn, alk, tds, tss, po4-p, toc, 3 - 1 X F - 1 X at Mat B - 1 X F - 1 X B - 1 X F - 1 X
$\frac{1}{2} = \frac{1}{2} = \frac{1}$	no3-n, d-po4-p, o-po4, body D - 1 X E - 1 X F - 1 X F - 1 X F - 1 X F - 1 X Mat	mo3-n, d-po4-p, o-po4, body D - 1 x D - 1 x D - 1 x E - 1 x F - 1 x F - 1 x F - 1 x Hosc: BZ-2 Surface Km, alk, tds, tss, po4-p, toc, A - 1 x B - 1 x B - 1 x	no3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, no3-n, d-po4-p, o-po4, body no3-n, d-po4-p, a-po4, body R - 1 X A - 1 X B - 1 X C - 1 X	no3-n, d-po4-p, o-po4, body D - 1 x 2 Desc: BZ-2 Surface E - 1 x 2 Desc: BZ-2 Surface Mat 1x F - 1 x	no3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, no3-n, d-po4-p, o-po4, body 3 Desc: BZ-3 Surface tkn, alk, tds, tss, po4-p, toc, 1003-n, d-po4-p, o-po4, body 1003-n, d-po4, body 1003-n, d-po4 p, toc, 1003-n, d-po4 p, toc, 1004 p, toc, 10	no3-n, d-po4-p, o-po4, body 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, no3-n, d-po4-p, o-po4, body R - 1 X B - 1 X C - 1 X F - 1 X B - 1 X C - 1 X F - 1 X B - 1 X C - 1 X F - 1 X F - 1 X C - 1 X F - 1 X F - 1 X C - 1 X F - 1 X F - 1 X F - 1 X
Approved By: 0.5.1, ymp ourocept Approved By: 0.5.1, ymp ourocept Surface Matrix: o A - 1 X Pt nh3 p w/ H2SO B - 1 X 8oz Alk p w/ Coo C - 1 X 2xambervoa g w/	2 Desc: BZ-2 Surface Matrix: o	2 Desc: BZ-2 Surface Mat tkn, alk, tds, tss, po4-p, toc, B - 1 X	2 Desc: BZ-2 Surface Mat tkn, alk, tds, tss, po4-p, toc, B - 1 X B - 1 X C - 1 X D - 1 X E - 1 X E - 1 X E - 1 X	2 Desc: BZ-2 Surface Mat tkn, alk, tds, tss, po4-p, toc, A - 1 X B - 1 X B - 1 X mo3-n, d-po4-p, o-po4, bod, D - 1 X E - 1 X E - 1 X 3 Desc: BZ-3 Surface Mat	2 Desc: BZ-2 Surface Mat tkn, alk, tds, tss, po4-p, toc, A - 1 X B - 1 X no3-n, d-po4-p, o-po4, body BZ-3 Surface 3 Desc: BZ-3 Surface tkn, alk, tds, tss, po4-p, toc, E - 1 X E - 1 X no3-n, d-po4-p, o-po4, body Mat Mat mo3-n, d-po4-p, o-po4, body Mat Mat Mat H = 1 X Mat Mat H = 1 X Mat Mat H = 1 X H = 1 X Mat H = 1 X H = 1 X Mat H = 1 X H = 1 X Mat H = 1 X H = 1 X Mat H = 1 X H = 1 X	2 Desc: BZ-2 Surface Mat tkn, alk, tds, tss, po4-p, toc, no3-n, d-po4-p, o-po4, body E = 1 X F = 1 X F = 1 X
Approved By: <u>Asymp</u> our of By: <u>Asymp</u> our our of By: <u>Asymp</u> our		tkn, alk, tds, tss, po4-p, toc, B - 1 X	tkn, alk, tds, tss, po4-p, toc, B - 1 X no3-n, d-po4-p, o-po4, body E - 1 X E - 1 X E - 1 X	thm, alk, tds, tss, po4-p, toc, A - 1 X mo3-n, d-po4-p, orpo4, body B - 1 X mo3-n, d-po4-p, orpo4, body D - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X B - 1 X F - 1 X	tkn, alk, tds, tss, po4-p, toc, A - 1 X no3-n, d-po4-p, o-po4, bod, B - 1 X 3 Desc: BZ-3 Surface tkn, alk, tds, tss, po4-p, toc, B - 1 X mo3-n, d-po4-p, o-po4, bod, Mat mo3-n, d-po4-p, o-po4, bod, A - 1 X mo3-n, d-po4-p, o-po4, bod, Mat Mat B - 1 X mo3-n, d-po4-p, o-po4, bod, B - 1 X Mat B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X B - 1 X	tkn, alk, tds, tss, po4-p, toc, B - 1 X B - 1 X C - 1 X D - 1 X E - 1 X F - 1 X F - 1 X
1 Desc: B2-1 Surface Matrix: o 1 Desc: B2-1 Surface A-1 X Pt nh3 p w/ H2S0 103-n, d-po4-p, o-po4, body Desc: B2-2 Surface A-1 X Pt nh3 p w/ H2S0 2 Desc: B2-2 Surface E-1 X Soz Alk p w/ Cool 2 Desc: B2-2 Surface Matrix: o tkn, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o 103-n, d-po4-p, o-po4, body Desc: B2-2 Surface 3 Desc: B2-3 Surface A-1 X Pt no3no2 p w/ cool 3 Desc: B2-3 Surface Matrix: o	$\begin{array}{c} C = 1 \\ D = 1 \\ R \\ \end{array}$	3 Desc: BZ-3 Surface Mat			no3-n, d-po4-p, o-po4, bod,	$\begin{array}{c} \mathbf{L} \mathbf{K} \mathbf{H}, \ \mathbf{L} \mathbf{K} \mathbf{S}, \ \mathbf{L} \mathbf{S}, \ \mathbf{D} \mathbf{O}^{-1} \mathbf{P}, \ \mathbf{L} \mathbf{O} \mathbf{C}, \\ \mathbf{B} = \mathbf{I} \mathbf{X} \\ \mathbf{A} = \mathbf{I} \mathbf{I} \mathbf{X} \\ \mathbf{A} = \mathbf{I} \mathbf{I} \mathbf{I} \mathbf{I} \mathbf{I} \mathbf{I} \mathbf{I} \\ \mathbf{I} \mathbf{I} \mathbf{I} \mathbf{I}$
WAC.K Approved By: Watrix: o 1 Desc: BZ-1 Surface Matrix: o 1 Desc: BZ-1 Surface A - 1 X Pt nh3 P w/ H2S0 mo3-n, d-po4-p, o-po4, bogy A - 1 X Pt nh3 P w/ H2S0 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, F - 1 X Soz Alk p w/ Cool 2 Desc: BZ-2 Surface tkn, alk, tds, tss, po4-p, toc, Matrix: o Matrix: o A - 1 X Pt nh3 P w/ H2S0 Masc: BZ-3 Surface A - 1 X Pt nh3 P w/ Cool S Desc: BZ-3 Surface Matrix: o Matrix: o Matrix: o	mo3-n, d-po4-p, orpo4, body C - 1 X D - 1 X E - 1 X 3 Desc: BZ-3 Surface Ithn, alk, tds, tss, po4-p, toc, Mat B - 1 X B - 1 X C - 1 X A - 1 X B - 1 X B - 1 X	F - 1 X 3 Desc: BZ-3 Surface Mat tkm, alk, tds, tss, po4-p, toc, A - 1 X B - 1 X B - 1 X C - 1 X B - 1 X	tkn, alk, tds, tss, $po4-p$, toc, B - 1 X C - 1 X	r r r r r r r r r r		no^3-n , $d-po4-p$, $o-po4$, bod_{1} $E = 1 \times E$
WACK Approved By: Approve	no3-n, d-po4-p, o-po4, body C - 1 x 3 Desc: BZ-3 Surface F - 1 x tkn, alk, tds, tss, po4-p, toc, Mat no3-n, d-po4-p, o-po4, body A - 1 x mo3-n, d-po4-p, o-po4, body B - 1 x mo3-n, d-po4-p, o-po4, body B - 1 x	3 Desc: BZ-3 Surface Mat 4 Mat Mat 5 Mat Mat 1 Mat Mat 1<	tkm, alk, tds, tss, po4-p, toc, A - 1 X B - 1 X B - 1 X no3-n, d-po4-p, o-po4, bod, D - 1 X R - 1 X E - 1 X mo3-n d-po4-p, o-po4, bod, E - 1 X R - 1 X E - 1 X	Exm., aix, tds, tds, tss, pot-p, toc, B - 1 X Πο3-n, d-pot-p, o-pot, bod, C - 1 X Πο3-n, d-pot-p, o-pot, bod, E - 1 X Πο3-n, d-pot-p, o-pot, bod, E - 1 X		

	Relinquished by: Market By: By MAD Date: 6/4/15 Time: 1130 Date: Date:	no3-n, d-po4-p, o-po4, bod	Sample No: 6 Desc: BZ-4 Surface	nh3-n, tkn, alk, tds, tss, po4-p, toc, K no2-n, no3-n, d-po4-p, o-po4, body K	sample No: 5 Desc: BZ-3 Deep		rlington VA 22201 03-387-5516 Ext: いみこべ	Work Order: 006226 Work Order Description: Beltzville Reservoir Remarks: ille Dam) use Rd., Ste. 600	Chain of Custody
Sample entered by:	ceived for laboratory by: By MM te: 6:4/015 Time: 1445		1	o heac C;	2xambervoa g w/ H3P04/; L bod p w/ Cool to 6 C Pt no3no2 p w/ Cool to trix: o Da Ti	Matrix: o Date: 6/4/15 A - 1 X Pt nh3 p w/ H2SO4 (pH<2); B - 1 X 8oz Alk p w/ Cool to 6 C;	Total Sampling Time (hours):Bottle Prep by: Laboratory Receipt Temp:Deg C. If Temp Unacceptable, On Ice? Y N Approved By:J_J_W	Leader: rxw No: 257590	

$ \begin{array}{l} \begin{array}{l} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \end{array} \end{array} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array}$		<pre>mo2-n, no3-n, d-po4-p, o-po4, bod, fc, tc, ple No: 9 Desc: BZ-6 Mid-Depth nh3-n, tkn, alk, tds, tss, po4-p, toc, M M mo2-n, no3-n, d-po4-p, o-po4, bod, bod,</pre>	Nos 18 Sample No: nh3-n, 1 M mo2-n, 1
Matrix: o Date: 6/ Time: 0 Time: 0 Time: 0 Time: 0 Time: 0 Time: 0 Time: 0 Time: 0 Time: 0 Matrix: 0 Time: 0 Time: 0 Date: 0 Date: 0 Date: 0 Time: 0 Date: 0 Date: 0 Time: 0 Date: 0 Date: 0 Time: 0 Date: 0		<pre>hle No: 7 Desc: BZ-5 Surface nh3-n, tkn, alk, tds, tss, po4-p, toc, hno2-n, no3-n, d-po4-p, o-po4, bod, fc, tc, fc, tc, hle No: 8 Desc: BZ-6 Surface nh3-n, tkn, alk, tds, tss, po4-p, toc,</pre>	2057 sample No: nh3-n, dh no2-n, No57 lES fc, tc, sample No: nh3-n,
rs): Bottle Prep by:	Total Sampling Time (hou Laboratory Receipt Temp: Approve	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201 703-387-5516 Ext: WACK	
ody Project Leader: rxw ervoir	Chain of Cust Beltzville Res Remarks:	3157 Wc David Wertz	Account: Customer:

Address: Tetra Tech (Beltzville Jam)
Account: 3157 Work Order: 006226 Project Leader: rxw No: 257590 Work Order Description: Beltzville Reservoir Customer: David Wertz Remarks:

	10581	
Relinquished by; Date: $\frac{\epsilon/4}{17}$		
and	2:11:10 PM 3157 David Wertz Tetra Tech (Belt 1320 North Court Arlington VA 222 703-387-5516 MACIK ====================================	
Received by:	Work Order: 006226 Work Order Description: Exville Dam) Douse Rd., Ste. 600 01 Ext: BZ-7 Deep BZ-7 Deep ss, po4-p, toc, 	
Ber Mart Recei	M. J. REIDER ASSOCIAT Chain of Custody Beltzville Reservoir Remarks: Total Sampling Time (Laboratory Receipt Te Appr	
Received for laboratory by: Date:	ES, INC. ES, INC. t Leader: rxw No: t Leader: rxw No: hours):Beg C. If Jemp Unacceptable oved By:Deg C. If Jemp Unacceptable Matrix: o A - 1 X Pt nh3 p w/ H2SO4 (pi B - 1 X Soz Alk p w/ Cool to C - 1 X Zxambervoa g w/ H3PC D - 1 X L bod p w/ Cool to (E - 1 X Pt no3no2 p w/ Cool	And Add Cop .
e: 1445 sample entered by:	No: 257590 No: 257590 Bottle Prep by: Bottle Prep by: Bottle Prep by: Bottle Prep by: 	





Attention: David Wertz					Date of H	Report:	07/13	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			7-15-0023009
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/0	/15 10:40
					Collected	By:	Clier	
Sample Desc: BZ-1 Surface					Date Rece	eived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	86	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/02	12:10	RES
CHEMISTRY						0.702	12.10	NES .
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/02	15:40	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	· · · · · · · · · · · · · · · · · · ·	12:35	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E			HRG
NITROGENS		() ·					10000	
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	16:37	JCL
Nitrogen, Nitrate	0.64	mg/l	.05	1	EPA 353.2	07/01	17:43	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	15:54	JCL
Nitrogen, Total Kjeldahl	0.31	mg/L	.25	1	EPA 351.2	1000		JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	1.3	mg/L	1	1	SM5310 C	07/02	02:07	ALD
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	07/06	14:00	тмн
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D		14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	07/07	09:15	HRG

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Richard Wheeler

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Attention:	David Wertz					Date of R	eport:	07/13	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:	2000		-15-0023009
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	07/01	/15 10:40
						Collected	By:	Clier	nt
Sample Desc:	BZ-1 Surface					Date Rece	ived:	07/01	1/15 12:30
PWSID: 313084	3			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample was placed in the incubator on 07/01/15 at 17:45.

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Attention: David Wertz					Date of R	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-0023010
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 10:30
20					Collected	By:	Clien	
Sample Desc: BZ-2 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	430	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	122.001.003	12:10	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	07/02	15:40	HRG
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	07/06	12:35	HRG
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/01	16:51	JCL
Nitrogen, Nitrate	0.21	mg/L	.05	1	EPA 353.2	07/01	17:45	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/01	15:57	JCL
Nitrogen, Total Kjeldahl	0.30	mg/l	.25	1	EPA 351.2	07/02	17:05	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	07/02	02:23	ALD
RESIDUES								
Solids, Total Dissolved	62	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	11	mg/L	3	1	SM 2540D	07/06	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	6	mg/l	1	1	SM 2320 B	07/07	09:30	HRG

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Attention:	David Wertz					Date of F	Report:	07/13	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:	et et et		7-15-0023010
	1320 North Courthouse Rd., Ste. Arlington VA 22201	600						07/04	145 40 70
	Artington VA 22201					Date Coll		1.000	1/15 10:30
						Collected	By:	Clier	nt
Sample Desc:	BZ-2 Surface					Date Rece	eived:	07/01	1/15 12:30
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

COMMENTS

O1 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 07/01/15 at 17:45.

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Attention: David Wertz					Date of R	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-002301
1320 North Courthouse Rd., 1	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 08:25
					Collected	By:	CLien	t
Sample Desc: BZ-3 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								220000
MICROBIOLOGY								
Fecal Coliform	3	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	210	mpn/100ml	1	1	SM 9223B	07/02	12:10	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/06	12:35	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	17:06	JCL
Nitrogen, Nitrate	0.52	mg/l	.05	1	EPA 353.2	07/01	17:46	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	15:58	JCL
Nitrogen, Total Kjeldahl	0.28	mg/L	.25	1	EPA 351.2	07/02	17:08	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	1.4	mg/L	1	1	SM5310 C	07/02	02:39	ALD
RESIDUES								
Solids, Total Dissolved	46	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/06	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	07/07	09:30	HRG

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, Reviewed and Approved by: alm

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Attention:	David Wertz					Date of R	eport:	07/13	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:			7-15-0023011
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	07/01	1/15 08:25
						Collected	By:	CLier	•
Sample Desc:	BZ-3 Surface					Date Rece	ived:	07/01	1/15 12:30
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

The total coliform sample was placed in the incubator on 07/01/15 02 at 17:45.

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Attention: David Wertz					Date of R	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-00230
1320 North Courthouse Rd., S	ste. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 08:25
					Collected	By:	Clier	it
Sample Desc: BZ-3 Mid-Depth					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY		10) 1000 0			Caracteria de		.2727	
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/06	12:40	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/01	17:20	JCL
Nitrogen, Nitrate	0.66	mg/L	.05	1	EPA 353.2	07/01	17:47	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/01	15:59	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/02	17:09	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/02	03:54	ALD
RESIDUES								
Solids, Total Dissolved	66	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/06	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	10	mg/L	1	1	SM 2320 B	07/07	09:30	HRG

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.

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Attention: David Wertz					Date of R	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0023013
1320 North Courthouse Rd., Ste	. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 08:25
					Collected	By:	CLien	it
Sample Desc: BZ-3 Deep					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/06	12:40	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	18:19	JCL
Nitrogen, Nitrate	0.61	mg/L	.05	1	EPA 353.2	07/01	17:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:00	JCL
Nitrogen, Total Kjeldahl	0.28	mg/L	.25	1	EPA 351.2	07/02	17:10	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/02	04:23	ALD
RESIDUES								
Solids, Total Dissolved	53	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/06	14:00	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	07/07	09:45	HRG

COMMENTS

O1 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.

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Attention: David Wertz					Date of R	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0023014
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 10:25
					Collected	By:	Clien	t
Sample Desc: BZ-4 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	58	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	2400	mpn/100mL	1	1	SM 9223B	07/02	12:10	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/06	12:40	HRG
Phosphorus as P, Total	0.04	mg/l	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/01	18:33	JCL
Nitrogen, Nitrate	0.05	mg/l	.05	1	EPA 353.2	07/01	17:49	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:01	JCL
Nitrogen, Total Kjeldahl	0.27	mg/l	.25	1	EPA 351.2	07/02	17:13	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	1.1	mg/L	1	1	SM5310 C	07/02	05:08	ALD
RESIDUES								
Solids, Total Dissolved	28	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/06	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	6	mg/l	1	1	SM 2320 B	07/07	09:45	HRG

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Attention:	David Wertz					Date of R	eport:	07/13	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0023014
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	07/01	/15 10:25
						Collected	By:	Clier	it
Sample Desc:	BZ-4 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 07/01/15 at 17:45.

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Attention: David Wertz Reported To: Tetra Tech (Beltzville Dam)					Date of R Lab ID:	eport:	07/13 3157	/15 -15-0023015
1320 North Courthouse Rd., Arlington VA 22201	Ste. 600				Date Coll Collected		07/01 Clien	/15 10:10 t
Sample Desc: BZ-5 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI	1100001000							
MICROBIOLOGY								
Fecal Coliform	6500	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/02	12:10	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/06	12:40	HRG
Phosphorus as P, Total	0.10	mg/l	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/01	18:48	JCL
Nitrogen, Nitrate	0.62	mg/l	.05	1	EPA 353.2	07/01	17:50	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:02	JCL
Nitrogen, Total Kjeldahl	0.75	mg/L	.25	1	EPA 351.2	07/02	17:14	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	9.2	mg/L	1	1	SM5310 C	07/02	05:28	ALD
RESIDUES								
Solids, Total Dissolved	67	mg/l	5	1	SM 2540C	07/06	14:00	TMH
Solids, Total Suspended	33	mg/L	3	1	SM 2540D	07/06	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	07/07	09:45	HRG

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Attention:	David Wertz					Date of R	eport:	07/13	5/15	
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0023015	
	1320 North Courthouse Rd., Ste. 6	00								
	Arlington VA 22201					Date Coll	ected:	07/01	/15 10:10	
						Collected	By:	Clier	nt	
Sample Desc:	BZ-5 Surface					Date Rece	ived:	07/01	1/15 12:30	
PWSID: 31308	43			Rep	Dilutn		Test	Test		
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst	

COMMENTS

O1 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.

- O2 The total coliform sample was placed in the incubator on 07/01/15 at 17:45.
- O3 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.

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Attention: David Wertz					Date of R	eport:	07/13	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-002301
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll			/15 07:50
					Collected	By:	Clien	nt
Sample Desc: BZ-6 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	110	mpn/100ml	1	1	SM 9223B	07/02	12:10	RES
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/06	12:40	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/02	12:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/01	19:03	JCL
Nitrogen, Nitrate	0.52	mg/L	.05	1	EPA 353.2	07/01	17:51	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/01	16:03	JCL
Nitrogen, Total Kjeldahl	0.32	mg/l	.25	1	EPA 351.2	07/02	17:14	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	1.6	mg/l	1	1	SM5310 C	07/02	05:44	ALD
RESIDUES								
Solids, Total Dissolved	53	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/06	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	07/07	10:00	HRG

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Attention:	David Wertz					Date of R	eport:	07/13	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0023016
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	07/01	1/15 07:50
						Collected	By:	Clier	nt
Sample Desc:	BZ-6 Surface					Date Rece	ived:	07/01	1/15 12:30
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample was placed in the incubator on O7/01/15 at 17:45.

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Attention: David Wertz					Date of Report: 07/13/1		/15	
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	cpor c.		-15-0023017
1320 North Courthouse Rd.,					Lub 15.		5151	15 0025011
Arlington VA 22201					Date Coll	ected.	07/01	/15 07:50
					Collected		Clier	
					correcter	Бу.	culei	L.
Sample Desc: BZ-6 Mid-Depth					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
		بدينمذ احت						
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/06	12:40	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/02	12:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	19:17	JCL
Nitrogen, Nitrate	0.66	mg/L	.05	1	EPA 353.2	07/01	17:54	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:06	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/02	17:15	JCL
OTHER						C 91 -		
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/02	05:59	ALD
RESIDUES						1.1		
Solids, Total Dissolved	69	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/06	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	10	mg/L	1	1	SM 2320 B	07/07	10:00	HRG

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.

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Attention: David Wertz					Date of F	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-002301
1320 North Courthouse Rd.,	Ste. 600				and and a			
Arlington VA 22201					Date Coll	ected:	07/01	/15 07:50
					Collected		Clier	A
Sample Desc: BZ-6 Deep					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
				Tactor	Frocedure	Date	Time	Anatyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	07/02	15:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	1	12:40	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/02	12:10	HRG
NITROGENS						1.1		
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	19:32	JCL
Nitrogen, Nitrate	0.56	mg/L	.05	1	EPA 353.2	07/01	17:57	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:09	JCL
Nitrogen, Total Kjeldahl	0.27	mg/L	.25	1	EPA 351.2	07/02	17:18	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	<1	mg/l	1	1	SM5310 C	07/02	06:13	ALD
RESIDUES								
Solids, Total Dissolved	70	mg/L	5	1	SM 2540C	07/06	14:00	ТМН
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	07/06	14:00	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	07/07	10:15	HRG

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.

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Attention: David Wertz					Date of Report: 07/13/1		5/15	
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0023019
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 08:50
					Collected	By:	Clier	nt
Sample Desc: BZ-7 Surface					Date Rece	eived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	11	/100mL	2	1	SM 9222D	07/01	15:00	TNS
Total Coliform	690	mpn/100ml	1	1	SM 9223B		12:10	
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/02	15:50	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E			
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/02	12:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	19:47	JCL
Nitrogen, Nitrate	0.51	mg/L	.05	1	EPA 353.2	07/01	17:58	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:10	JCL
Nitrogen, Total Kjeldahl	0.27	mg/L	.25	1	EPA 351.2	07/02	17:19	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	1.3	mg/L	1	1	SM5310 C	07/02	06:42	ALD
RESIDUES								
Solids, Total Dissolved	68	mg/L	5	1	SM 2540C	07/06	14:20	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/06	14:00	тмн
TITRATIONS						1.000		
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	07/07	10:15	HRG
TITRATIONS								

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Attention:	David Wertz					Date of R	eport:	07/13	8/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:	1000	3157	-15-0023019
	1320 North Courthouse Rd., Ste. 6	500							
	Arlington VA 22201					Date Coll	ected:	07/01	/15 08:50
						Collected	By:	Clier	nt
Sample Desc:	BZ-7 Surface					Date Rece	ived:	07/01	/15 12:30
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample was placed in the incubator on 07/01/15 at 17:45.

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Attention: David Wertz					Date of H	Report:	07/13	3/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			7-15-00230
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	lected:	07/01	/15 08:50
					Collected	By:	Clier	
Sample Desc: BZ-7 Mid-Depth					Date Rece	eived:	07/01	1/15 12:30
							1	1
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/02	15:50	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	and the second s		HRG
Phosphorus as P, Total	0.10	mg/L	.01	1	SM 4500P-E	100 C 100		HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	20:01	JCL
Nitrogen, Nitrate	0.55	mg/L	.05	1	EPA 353.2	07/01	17:59	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:11	JCL
Nitrogen, Total Kjeldahl	0.62	mg/L	.25	1	EPA 351.2	07/02	17:20	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	6.2	mg/L	1	1	SM5310 C	07/02	07:02	ALD
RESIDUES								
Solids, Total Dissolved	67	mg/L	5	1	SM 2540C	07/06	14:20	ТМН
Solids, Total Suspended	27	mg/L	3	1	SM 2540D	07/06	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	07/07	10:15	HRG

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.

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Attention: David Wertz					Date of R	eport:	07/13	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-002302
1320 North Courthouse Rd., S	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/01	/15 08:50
					Collected	By:	Clien	• · · · · · · · · · · · · · · · · · · ·
Sample Desc: BZ-7 Deep					Date Rece	ived:	07/01	/15 12:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY					(alarahan alarahan)			
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/02	15:50	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/06	12:45	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/02	12:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/01	20:16	JCL
Nitrogen, Nitrate	0.62	mg/L	.05	1	EPA 353.2	07/01	18:00	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/01	16:12	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/02	17:21	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/01	14:20	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/02	07:17	ALD
RESIDUES								
Solids, Total Dissolved	66	mg/L	5	1	SM 2540C	07/06	14:20	тмн
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	07/06	14:00	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	07/07	10:30	HRG

COMMENTS

O1 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.

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me:	5 / Jrime: 1115	Date:
Br MAS Received for laboratory by. Bon MAS	shed by: Much Dur Received by:	Relinquished by:
E - 1 X Pt no3no2 p w/ Cool to 6 C; F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;	te, NM	fc, t
	, no3-n, d-po4-p,	mo2-n
- 1 X	o: 3 Desc: BZ-3 Surface n, tkn, alk, tds, tss, po4-p, toc,	Sample No: nh3-n,
 1 1 + X X X	MA TOT T	fe, te,
o hea	n, tkn, alk, tds, tss, po4-p, toc,	nh3-n, /
Matrix: o Date: $\frac{7}{1/1}$ Time: $\frac{7}{1036}$	-	Sample No:
 	n, no3-n, d-po4-p, o+po4, bod	fc, tc,
XX	r H	Ą.
t.	o: 1 Desc: BZ-1 Surface n. tkn. alk. tds. tss. po4-p. toc.	13009 Sample No:
Laboratory Receipt Temp: $(g \text{ Deg C. If Temp Unacceptable, On Ice? Y N} Approved By: g \leq w$	WAC IK	===
Total Sampling Time (hours):Bottle Prep by:	: Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201 : 703-387-5516 Ext:	Address: Phone:
Project Leader: rxw No: 258471 n: Beltzville Reservoir Remarks:	3157 David Wertz	Account: Customer:
Chain of Custody	-	
Page:	8:28:35 AM	05/27/15

aboratory by: Boy Mit	By MM Received for laboratory by: Date: 7/1/15 Ti	Relinquished by: Received by: Date:	Relinqui Date:
<pre>Matrix: o The: Date: Date</pre>	1 1 1 1 1 夏口口留を	nh3-n, tkn, alk, tds, tss, po4-p, toc, mo2-n, no3-n, d-po4-p, o-po4, body	ν, sampre No: nh3-n, no2-n,
h3 p w/ H2SO4 (pH Alk p w/ Cool to bervoa g w/ H3PO d p w/ Cool to 6 o3no2 p w/ Cool lMicro p w/ Ster	道限びの留 な	nod-n, d-po4-p, orpo	
Mat XXXX		mo3-n, d-po4-p,	13014 Sample No:
ct II		<pre>7 Desc: BZ-5 Surface tkn, alk, tds, tss, po4-p, toc,</pre>	22015 Sample No: nh3-n,
Bottle Prep by: C. If Temp Unacceptable, On Ice? Y N B SW	Total Sampling Time (hours): Laboratory Receipt Temp: <u>(</u> Deg Approved By:	ne: 703-387-5516 Ext: rs: <u>WACIK</u>	Phone: Samplers:
		David Wertz Tetra Tech (Beltzvill 1320 North Courthouse North Courthouse	Customer: Address:
rxw No: 258471	Custody Project Leader: Reservoir	Chain of) nt: 3157 Work Order: 006226 Work Order Description: Beltzville	Account:
COFC.PRT Page: 3		15 8:28:36 AM	ejb 05/27/15

Sample entered by:			
rime: 1230	Received for laboratory by: Date: $7 - 1 > 15$ Ti	Relinquished by: Market by: Market by: Market by: Received by: Market by: Mar	Relin Date:
/ H2SO4(pH<2); y/ Cool to 6 C; g w/ H3P04/zero he Cool to 6 C; p w/ Cool to 6 C;	A - 1 X Pt nh3 p w B - 1 X 8oz Alk p v C - 1 X 2xambervoa D - 1 X L bod p w/ E - 1 X Pt no3no2 1	nh3-n, tkn, alk, tds, tss, po4-p, toc, M M no2-n, no3-n, d-po4-p, o-po4, bod,	
<pre>Pt nh3 p w/ H2SO4 (pH<2); 8oz Alk p w/ Cool to 6 C; 2xambervoa g w/ H3PO4/zero headspace; L bod p w/ Cool to 6 C; pt no3no2 p w/ Cool to 6 C; 250mlMicro p w/ Sterile/Na2S2O3; z50mlMicro p w/ Sterile/Na2S2O3; rime: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</pre>	A - 1 X Pt nh3 B - 1 X 8oz Al C - 1 X 2xambe D - 1 X 1 bod E - 1 X Pt no3 F - 1 X 250mlM Matrix:	nh3-n, tkn, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod fc, tc, fly Sample No: 12 Desc: BZ-7 Mid-Depth	73020 Sam
p w/ H2SO4(pH<2); p w/ Cool to 6 C; voa g w/ H3PO4/zero L w/ Cool to 6 C; o2 p w/ Cool to 6 C; Date:	A - 1 X Pt nh3 p v B - 1 X 8oz Alk p C - 1 X 2xambervoz D - 1 X L bod p w E - 1 X Pt no3no2 Matrix: o	nh3-n, tkn, alk, tds, tss, po4-p, toc, No2-n, no3-n, d-po4-p, o-po4, bogy Sample No: 11 Desc: BZ-7 Surface	
Matrix: o Date: $\frac{7/1/15}{7.5}$	Matrix:	zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz	1.3018 sam
Temp Unacceptable, On Ice? Y N	atory Receipt Tem Appro	703-387-5516 Ext: WACIK	Sam
Bottle Prep by:	al Sampling Time (hours):	Address: Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201 Total	Ad
No: 258471	Project Leader: rxw Beltzville Reservoir Remarks:	Account: 3157 Work Order: 006226 Work Order Description: Be Customer: David Wertz Rem	Ac Cus
Page:	Chain of Custody	8:28:36 AM	05/
COFC.PRT	J. REIDER ASSOCIATES, INC.	м.	ejb

Relinquished by: Date: 7/1/15		ראסיט Sample No: חלוש חלוש אין חס2-ח,	Address: Phone: Samplers:	Account: Customer:	ejb 05/27/15
and)	13 tkn, ho3-	Tetr 1320 Arli: 703-	3157 David Wertz	8:28:36 AM
Received by:	- 1 6	Desc: BZ-7 Deep alk, tds, tss, po4-p, toc, n, d-po4-p, <mark>o-po4, bod</mark>	zville Dam) nouse Rd., Ste. 600)1 Ext:	Work Order: 006226 Work Order Description:	
By May Received for 1ab Date: 7-1-15			otal Sampling Time (h aboratory Receipt Tem Appro	Project Leader: Beltzville Reservoir Remarks:	
eived for laboratory by: Byfffff e: 71/15 Time: 1230 Sample entered by: MTC		Matrix: o Date: 7////5 Time: 2504 (pH<2); B - 1 X Pt nh3 p w/ H2SO4 (pH<2); 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;	tle Prep by: ble, On Ice? Y	rxw No: 258471	COFC.FRT Page: 5





Attention: David Wertz					Date of H	Report:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		2 M (1)	-15-002878
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/23	/15 11:05
					Collected		Clier	
Sample Desc: BZ-1 Surface					Date Rece	eived:	07/23	/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
DACTI				-				
BACTI MICROBIOLOGY								
Fecal Coliform	21	(100-1	2			07/07		144
Total Coliform	>2400	/100mL	2	1	SM 9222D		14:30	RES
CHEMISTRY	22400	mpn/100ml	1	1	SM 9223B	07/24	11:00	PLW
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg /1	.01	1	CH /5000 5	07/07	45.00	
Phosphorus as P, Dissolved	<.05	mg/l	.01	1	SM 4500P-E			ALD
Phosphorus as P, Total	0.02	mg/L	.05	1 1	SM 4500P-E			HRG
NITROGENS	0.02	mg/l	.01		SM 4500P-E	01/21	14:20	HRG
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	20:12	JCL
Nitrogen, Nitrate	0.72	mg/L	.05	1	EPA 353.2		17:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2		16:04	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/27	16:02	
OTHER	0.00				LIN SSILL	01/21	10.02	JCL
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	1.0000000000000000000000000000000000000	20:00	
RESIDUES		- 57		<u> </u>				THE B
Solids, Total Dissolved	42	mg/l	5	1	SM 2540C	07/29	14:00	ТМН
Solids, Total Suspended	17	mg/l	3	1	SM 2540D	07/29	14:00	
TITRATIONS		57		Ê.	and the set of			
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	07/27	14:00	HRG
the stand on the state of the second state of								

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Reviewed and Approved by:

Richard Wheeler

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Attention:	David Wertz					Date of R	eport:	07/31	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0028785
	1320 North Courthouse Rd., Ste. 6	500							
	Arlington VA 22201					Date Coll	ected:	07/23	5/15 11:05
						Collected	By:	Clier	nt
Sample Desc:	BZ-1 Surface					Date Rece	eived:	07/23	5/15 13:15
PWSID: 31308	/3			Den	Dilutn				
FW31D. 31300	40	Jacobien III.	4.47	Rep		120000	Test	Test	Sec. 145
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
		ala a serie a s							

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.

O2 The total coliform sample was placed in the incubator on O7/23/15 at 16:45.

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Reviewed and Approved by:

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Attention: David Wertz					Date of F	eport:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0028786
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/23	/15 10:50
					Collected	By:	Clier	
Sample Desc: BZ-2 Surface					Date Rece	ived:	07/23	5/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	15	/100mL	2	1	SM 9222D	07/23	14:30	RES
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B		11:00	
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	12.44		HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/27	14:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/23	20:56	JCL
Nitrogen, Nitrate	0.15	mg/l	.05	1	EPA 353.2	07/23	17:52	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:09	JCL
Nitrogen, Total Kjeldahl	<.25	mg/l	.25	1	EPA 351.2	07/27	16:03	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/27	20:15	ALD
RESIDUES								
Solids, Total Dissolved	40	mg/L	5	1	SM 2540C	07/29	14:00	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/29	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	7	mg/L	1	1	SM 2320 B	07/27	14:15	HRG

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Attention:	David Wertz					Date of F	Report:	07/31	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0028786
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	.ected:	07/23	8/15 10:50
						Collected	By:	Clier	nt
Sample Desc:	BZ-2 Surface					Date Rece	eived:	07/23	3/15 13:15
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
									and the second s

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.

O2 The total coliform sample was placed in the incubator on 07/23/15 at 16:45.

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Attention: David Wertz					Date of R	Report:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		1.	- 15-0028787
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/23	/15 08:35
					Collected	By:	CLier	it
Sample Desc: BZ-3 Surface					Date Rece	eived:	07/23	5/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI							1000	
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	07/23	14:30	RES
Total Coliform	190	mpn/100mL	1	1	SM 9223B	07/24	11:00	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/28	12:15	HRG
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	07/27	14:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	21:11	JCL
Nitrogen, Nitrate	0.37	mg/l	.05	1	EPA 353.2	07/23	17:53	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:10	JCL
Nitrogen, Total Kjeldahl	0.26	mg/l	.25	1	EPA 351.2	07/28	11:00	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.6	mg/L	1	1	SM5310 C	07/27	20:30	ALD
RESIDUES								
Solids, Total Dissolved	44	mg/l	5	1	SM 2540C	07/29	14:00	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/29	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	10	mg/l	1	1	SM 2320 B	07/27	14:15	HRG

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Attention: David Wertz					Date of F	lonant.	07/31	1/15	
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	report.		7-15-0028787	,
1320 North Courthouse Rd., Ste	. 600				Lab IV.		5127	-13-0020101	
Arlington VA 22201					Date Coll	.ected:	07/23	3/15 08:35	
					Collected	By:	Clier	nt	
Sample Desc: BZ-3 Surface					Date Rece	eived:	07/23	3/15 13:15	
PWSID: 3130843			Rep	Dilutn		Test	Test		
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst	
	4	Canada and and a second second							

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.

O2 The total coliform sample was placed in the incubator on 07/23/15 at 16:45.

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Attention: David Wertz					Date of F	enort.	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	oporti		-15-002878
1320 North Courthouse Rd.,							5,51	15 002010
Arlington VA 22201					Date Coll	ected:	07/23	/15 08:35
					Collected		Clien	 A 10 (1) (1) (1) (1) (1)
						,.		, ,
Sample Desc: BZ-3 Mid-Depth					Date Rece	ived:	07/23	3/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/28	12:15	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	07/27	14:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	21:25	JCL
Nitrogen, Nitrate	0.68	mg/L	.05	1	EPA 353.2	07/23	17:54	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/23	16:11	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28	11:02	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.5	mg/L	1	1	SM5310 C	07/27	20:44	ALD
RESIDUES								
Solids, Total Dissolved	57	mg/L	5	1	SM 2540C	07/29	14:00	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/29	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	07/27	14:15	HRG

COMMENTS

O1 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.

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Attention: David Wertz					Date of F	Report:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		10. C. (1. 7	, -15-002878
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	lected:	07/23	/15 08:35
					Collected	By:	Clier	nt
Sample Desc: BZ-3 Deep					Date Rece	eived:	07/23	5/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/28	12:15	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/27	14:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	21:40	JCL
Nitrogen, Nitrate	0.61	mg/L	.05	1	EPA 353.2	07/23	17:55	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:12	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28	11:03	JCL
OTHER						355		
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.0	mg/L	1	1	SM5310 C	07/27	20:59	ALD
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	07/29	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/29	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	07/27	14:30	HRG

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.

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Attention: David Wertz					Date of R	eport:	07/31	/15
Reported To: Tetra Tech (Beltzville D					Lab ID:		3157	-15-002879
1320 North Courthouse Ro	I., Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/23	/15 10:45
					Collected	By:	Clien	t
Sample Desc: BZ-4 Surface					Date Rece	ived:	07/23	/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	3	/100mL	2	1	SM 9222D	07/23	14:30	RES
Total Coliform	1000	mpn/100ml	1	1	SM 9223B	07/24	11:00	PLW
CHEMISTRY						1.10		
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/29	11:00	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	07/27	14:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	07/23	21:55	JCL
Nitrogen, Nitrate	1.39	mg/L	.05	1	EPA 353.2	07/23	17:56	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:12	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28	11:04	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/27	21:14	ALD
RESIDUES								
Solids, Total Dissolved	52	mg/L	5	1	SM 2540C	07/29	14:00	тмн
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/29	14:00	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	7	mg/L	1	1	SM 2320 B	07/27	14:30	HRG

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Attention:	David Wertz					Date of R	eport:	07/31	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0028790
	1320 North Courthouse Rd., Ste. 6	500							
	Arlington VA 22201					Date Coll	ected:	07/23	8/15 10:45
						Collected	By:	Clier	nt
Sample Desc:	BZ-4 Surface					Date Rece	ived:	07/23	3/15 13:15
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample was placed in the incubator on 07/23/15 at 16:45.

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Attention: David Wertz					Date of R	enort.	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	cport.		/15 -15-002879
1320 North Courthouse Rd., S	Ste. 600				246 10.		5151	13 002013
Arlington VA 22201					Date Coll	ected:	07/23	/15 10:30
					Collected		Clien	
Sample Desc: BZ-5 Surface					Date Rece	ived:	07/23	/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI							000	
MICROBIOLOGY								
Fecal Coliform	56	/100mL	2	1	SM 9222D	07/23	14:30	RES
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	and the second sec	11:00	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/29	11:00	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/27	14:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	22:09	JCL
Nitrogen, Nitrate	1.15	mg/l	.05	1	EPA 353.2	07/23	17:57	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:13	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28	11:05	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.3	mg/L	1	1	SM5310 C	07/27	21:28	ALD
RESIDUES								
Solids, Total Dissolved	65	mg/L	5	1	SM 2540C	07/29	14:00	ТМН
Solids, Total Suspended	10	mg/L	3	1	SM 2540D	07/29	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	07/27	14:30	HRG

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Attention:	David Wertz					Date of F	eport:	07/31	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0028791
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	07/23	3/15 10:30
						Collected	By:	Clier	nt
Sample Desc:	BZ-5 Surface					Date Rece	ived:	07/23	3/15 13:15
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 07/23/15 at 16:45.

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Attention: David Wertz					Date of R	eport:	07/31	the second se
Reported To: Tetra Tech (Beltzville Dam)	C. San				Lab ID:		3157	-15-0028792
1320 North Courthouse Rd.,	Ste. 600							and the second
Arlington VA 22201					Date Coll			/15 07:45
					Collected	By:	Clien	it
Sample Desc: BZ-6 Surface					Date Rece	ived:	07/23	/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	07/23	14:30	RES
Total Coliform	440	mpn/100ml	1	1	SM 9223B		11:00	
CHEMISTRY		wheely require	-	×.		01/24	11.00	
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	and a state of the second		
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/27	14:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	22:24	JCL
Nitrogen, Nitrate	0.38	mg/L	.05	1	EPA 353.2	07/23	17:58	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:14	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28	11:06	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.7	mg/l	1	1	SM5310 C	07/27	21:43	ALD
RESIDUES								
Solids, Total Dissolved	55	mg/L	5	1	SM 2540C	07/29	14:00	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/29	14:00	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	07/27	14:45	HRG

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Attention:	David Wertz					Date of R	eport:	07/31	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0028792
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	07/23	3/15 07:45
						Collected	By:	Clier	nt
Sample Desc:	BZ-6 Surface					Date Rece	ived:	07/23	3/15 13:15
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 07/23/15 at 16:45.

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Attention: David Wertz					Date of F	eport:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			, 7-15-002879
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/23	3/15 07:45
					Collected	By:	Clier	it
Sample Desc: BZ-6 Mid-Depth					Date Rece	ived:	07/23	8/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.05	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/29	11:05	HRG
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	07/27	14:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	22:38	JCL
Nitrogen, Nitrate	0.70	mg/L	.05	1	EPA 353.2	07/23	17:59	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:15	JCL
Nitrogen, Total Kjeldahl	<.25	mg/l	.25	1	EPA 351.2	07/28	11:09	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.2	mg/L	1	1	SM5310 C	07/27	21:58	ALD
RESIDUES								
Solids, Total Dissolved	63	mg/l	5	1	SM 2540C	07/29	14:00	ТМН
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/29	14:00	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	13	mg/l	1	1	SM 2320 B	07/27	14:45	HRG

COMMENTS

O1 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.

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Attention: David Wertz					Date of F	Report:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		- D	-15-00287
1320 North Courthouse Rd., S	Ste. 600							
Arlington VA 22201					Date Coll	ected:	07/23	8/15 07:45
					Collected	By:	Clier	
Sample Desc: BZ-6 Deep					Date Rece	eived:	07/23	8/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E		11:05	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E		14:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	22:53	JCL
Nitrogen, Nitrate	0.58	mg/L	.05	1	EPA 353.2	07/23	18:00	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/23	16:16	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28		
OTHER						1.04		
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	07/27		ALD
RESIDUES								
Solids, Total Dissolved	64	mg/l	5	1	SM 2540C	07/29	14:00	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	07/29	14:00	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	07/27	14:45	HRG

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.

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Attention: David Wertz					Date of F	Report:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-002879
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	lected:	07/23	3/15 09:10
					Collected	By:	Clier	nt
Sample Desc: BZ-7 Surface					Date Rece	eived:	07/23	3/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								C. C. States
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	07/23	14:30	RES
Total Coliform	440	mpn/100ml	1	1	SM 9223B		11:00	
CHEMISTRY						1		
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	07/29	11:05	HRG
Phosphorus as P, Total	0.01	mg/l	.01	1	SM 4500P-E	07/27	14:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/23	23:08	JCL
Nitrogen, Nitrate	0.24	mg/L	.05	1	EPA 353.2	07/23	18:01	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	07/23	16:17	JCL
Nitrogen, Total Kjeldahl	<.25	mg/l	.25	1	EPA 351.2	07/28	11:11	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.8	mg/l	1	1	SM5310 C	07/28	08:21	ALD
RESIDUES								
Solids, Total Dissolved	43	mg/l	5	1	SM 2540C	07/29	14:25	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/29	14:25	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	9	mg/L	1	1	SM 2320 B	07/27	15:00	HRG

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by: Kuling Richard Wheeler

Page 1 of 2

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Attention:	David Wertz					Date of F	eport:	07/31	1/15	
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-002879	5
	1320 North Courthouse Rd., Ste.	600								
	Arlington VA 22201					Date Coll	ected:	07/23	3/15 09:10	
						Collected	By:	Clier	nt	
0l. 0										
sample Desc:	BZ-7 Surface					Date Rece	ived:	07/23	3/15 13:15	
PWSID: 31308	43			Rep	Dilutn		Test	Test		
		Result	Unit	Limit	Factor	Procedure	Date	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 07/23/15 at 16:45.

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:

Richard Wheeler

Page 2 of 2

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Attention: David Wertz					Date of F	Report:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0028796
1320 North Courthouse Rd., S	te. 600							
Arlington VA 22201					Date Coll	.ected:	07/23	/15 09:10
					Collected	By:	Clien	nt
Sample Desc: BZ-7 Mid-Depth					Date Rece	ived:	07/23	5/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
						butt	TTING	Anacyse
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/29	11:05	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/27	14:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/24	00:06	JCL
Nitrogen, Nitrate	0.82	mg/L	.05	1	EPA 353.2	07/23	18:06	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/23	16:22	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	07/28	11:12	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	07/28	08:06	ALD
RESIDUES								
Solids, Total Dissolved	66	mg/L	5	1	SM 2540C	07/29	14:25	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/29	14:25	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	07/27	15:15	HRG

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 (Beltzville Dam)

Reviewed and Approved by:

Richard Wheeler

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Attention: David Wertz					Date of F	eport:	07/31	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	1.2.1.1.1.	10.112	, -15-002879
1320 North Courthouse Rd., S	Ste. 600							1.1% Creation
Arlington VA 22201					Date Coll	ected:	07/23	8/15 09:10
					Collected		Clier	· · · · · · · · · · · · · · · · · · ·
Sample Desc: BZ-7 Deep					Date Rece	ived:	07/23	8/15 13:15
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/23	15:28	ALD
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E		11:05	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E			HRG
NITROGENS		1000						
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/24	00:21	JCL
Nitrogen, Nitrate	0.69	mg/L	.05	1	EPA 353.2	07/23	18:07	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2		16:23	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2		11:13	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	10:30	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	07/28	08:37	ALD
RESIDUES						1		
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	07/29	14:25	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D		14:25	тмн
TITRATIONS		7.0						
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	07/27	15:15	HRG

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 (Beltzville Dam)

Reviewed and Approved by: ulm Richard Wheeler

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NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.

	jbs 06/24/15	4:28:39 PM		M. J. REIDER ASSOCIATES, INC.	COFC.PRT Page: 1
				Chain of Custody	
	Account:	3157	Work Order: 006226 Work Order Description: Beltzville Reservoir	Project Leader: rxw Beltzville Reservoir	ø No: 260281
	Customer:	David Wertz		Remarks:	
	Address:	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd.,	lle Dam) se Rd., Ste. 600		
	1	ALLINGCON VA 2220		Total Sampling Time (hours):	Bottle Prep by:
	Phone: Samplers:	WACIK EXC.		Laboratory Receipt Temp: 1 Deg C	C. If Temp Unacceptable, On Ice? Y N
58182	sample No:	1 Desc:	BZ-1 Surface	W	atrio
	пһ3-п,	tkn, alk, tds,	tss, po4-p, toc,	T	X Pt I
	n n	X M Anoten Genoten Cenot	U. Pool Ac	Г I I	2 2 X 0 1
	#C, to			1.1	X Pt no3no2 1 X 250mlMicro
28784	Sample No:	2 Desc:	BZ-2 Surface		Matrix: o Date: 7/23/15
	nh3-n,	tkn, alk, tds,	tss, po4-p, toc,	т н Қ	××
	W	M South M	bod how a	с т 1	I X 2xambervoa g w/ H3PO4/zero headspace; r r hod v w/ cool to 6 c.
	fc, tc,	North Charles	Contraction of the second seco		XX
C8182	Sample No:	3 Desc:	BZ-3 Surface		Matrix: o Date: 7/22/13
2	nh3-n	nh3-n, tkn, alk, tds, tss, po4-p, toc,	po4-p, toc,	T.	X Pt nh3 p w/ H2SO4 (pH<2)
	AL	W		г т	X 8oz Alk p w/ Coc X 2xambervoa g w/
	no2-n, fe. te.	no3-n, d-po4-p,	o-pod, body	1 I I	1 X L bod p w/ Cool to 6 C; 1 X Pt no3no2 p w/ Cool to 6 C; 1 X 250mlMicro p w/ Sterile/Ma2S203;
	mid				i i
			0		
	Relinquished by	hed by Africa hed	Received by	Received for la	Laboratory by the UN
	Date: Z	123/15 / Time:	e: //45	Date: 702/115	Time: 1315
					Sample entered by: WTZ

Acount: 3137 Ouch of Cuetedy Account: 3137 Work Order Description: Peroject Leader: No.: 3031 Address: Transfer: Work Order Description: Peroject Leader: No.: 3031 Address: Transfer: Matrix: Peroject Leader: No.: 3031 Address: Transfer: Matrix: Peroject Leader: No.: 3034 Address: Transfer: Matrix: Peroject Leader: No.: 3034 Matrix: O:: 307-5516 Matrix: Done: No:: 3034 Matrix: O:: 307-5516 Matrix: Done: No:: 3034 Matrix: O:: 307-5516 Matrix: Done: No:: 3034 Matrix: Matrix: Done: Done: No:: 3034 Matrix: Matrix: Done: No:: 3034 No:: 3034 Matrix: Matrix: Done: No:: 3044 No:: 3044 Matrix: Done: No:: 3045 No:: 3045 No:: 3046 Matrix: N		jbs 06/24/15 4	4:28:39 PM		M. J. REIDER ASSOCIATES, INC.	COFC.PRT Page: 2
Account: 3157 Work Ocder: 000256 Project Leader: traw No: 26021 Customer: David Werts Remarkai Remarkai Remarkai 3120 Matrix: Rooth Ocder: Description: Betrylile Reservoir Description: Matrix: No: 26021 Address: 1220 Morth Ocder: Description: Betrylile Remercia No: 26021 Second Address: 1220 Morth Ocder: Description: Betrylile Remercia Description: Matrix: O Description: Matrix: O Rumber: 01-317-5516 Exr: Laboratory Resciption: Famp. (Description: Dispective Remotes) Description: Dispective Remotes Sumple No: 4 Desc: B2-3 Mid-Depth Matrix: O Description: Dispective Remotes No Sumple No: 5 Description: Matrix: O Description: Dispective Remotes Description: Dispective Remotes Dispective Remotes Marcin: Matrix: O No Description: Remotes Dispective Remotes Dispective Remotes Marcin: Matrix: O Natrix: O Description: Dispective Remotes Dispective Remotes Dispective Remotes Marcin: Matrix: O Natrix: O Natrix: O Description: Dispective Remotes Dispective Remotes Marcin: Matrix: No No Dispective Remotes Dispective Remotes <						
Customer: pavid Werts menten and werts mean our customer and werts the mean of		Account:	3157	Work Order: 006226	t Leader:	
Address:Terra for heat with sealsSuplares:Toral Samplare Na., Ste. 600Phone:703-387-516Bundlers: $103-387-516$ Bundlers: $112-37/57$ <td></td> <td></td> <td>David Wertz</td> <td>MOLK OLDEL DESCLIPTION</td> <td>TTOATBAST ALL AND THOATBAST ALL AND ALL</td> <td></td>			David Wertz	MOLK OLDEL DESCLIPTION	TTOATBAST ALL AND THOATBAST ALL AND ALL	
Phone:70-387-5516Ext:Total Sampling Time (houre):Dottle Frep by:Samplers: $\bigcup OOI:$ $\bigcup OOI:$ $\square Deg C. If Temp Unacceptable, On Ice? Y NSample No:4basc:B = 2.3 Mid-bepth\inf OO:14basc:B = 2.3 Mid-bepth\inf OO:14basc:B = 2.3 Mid-bepth\inf OO:14basc:B = 2.3 Mid-bepth\inf OO:16\bigcup OO:\bigcup OO:\inf OO:16\bigcup OOI:\bigcup OOI:\bigcap OO:17\boxtimes OOI:\bigcup OOI:\bigcap OO:17\boxtimes OOI:\bigcup OOI:\bigcap OO:17\boxtimes OOI:\bigcup OOI:\bigcap OO:16\bigcup OOI:\bigcup OOI:\bigcap OO:17\boxtimes OOI:\bigcup OOI:\bigcap OO:16\bigcup OOI:\bigcup OOI:\bigcap OO:$			Tetra Tech (Beltz 1320 North Courth Arlington VA 2220	ille Dam) use Rd., Ste.		
Author in the second state of			703 - 307 - 551 6		Sampling Time (hours):	Prep by
Sample No: 4 Desc: R2-3 Mid-Depth mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-3 Mid-Depth mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-3 Deep mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-3 Deep mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-3 Deep mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, alk, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-n, thm, tds, tss, po4-p, toc, Marix: 0 Desc: R2-4 Surface mi3-1 Surface Marix: 0 Desc, for to for for Marix: 0 Desc, for to for for Marix: 0 Desc, for to for for Marix: 0 Desc, for to for for for Marix			X		Laboratory Receipt Temp: 6 Deg C. Approved By: 6 M	Temp Unacceptable, On Ice? Y
<pre>mi3-n, thn, alk, tds, tss, po4-p, toc, Matrix: a moder of c; mo2-n, mo3-n, d-po4-p, bock mi3-n, thn, alk, tds, tss, po4-p, toc, Matrix: a mo3no2 p w/ cool to 6 c; sample No: 5 Desc: BZ-3 Deep mi3-n, thn, alk, tds, tss, po4-p, toc, Matrix: a matrix: a mat</pre>	18182		4 Desc: B	id-Depth	Matri	ix: o $\frac{\text{Date:}}{\text{mino:}} \frac{7/25/15}{\sqrt{25}}$
<pre>Matrix: o and and a poil body mo2-m, mo3-m, d-poil pody mo2-m, mo3-m, d-poil pody mo2-m, mo3-m, d-poil pody, pod, mo2-m, mo3-m, d-poil pody, pod, mo2-m, mo3-m, d-poil pod, mo2-m, mo3-m, mo3-m, mo3-m, mo2-m, mo3-m, mo3-m, mo3-m, mo2-m, mo3-m, mo2-m, mo3-m, mo2-m, mo3-m, mo2-m, mo3-m, mo2-m, mo3-m, mo2-m, mo2</pre>			alk, tds,		- 1 X - 1 X	t nh3 p w/ H2SO4 (pH<2);
<pre>Sample No: 5 Desc: B2-3 Deep mi3-n, tkn, alk, tds, tss, po4-p, toc,</pre>			d-bo4-b.		х X 1 1 1 1	<pre>xamberver y / H3P04/zero headspace; bod p w/ Cool to 6 C;</pre>
<pre>Sample No: 5 Desc: BZ-3 Deep mi3-n, thm, alk, tds, tss, po4-p, toc,</pre>			AN		- 1 X	t no3no2 p w/ Cool to 6 C;
<pre>mh3-n, tkn, alk, tds, tss, po4-p, toc, M. A. A. A. B. 1 X 802 Alk p v C. 1 X 2xambervoa mo2-n, mo3-n, d-po4-p, o-po4, bod mb3-n, thn, alk, tds, tss, po4-p, toc, Matrix: o mb3-n, thn, alk, tds, tss, po4-p, toc, Matrix: o mb3-n, d-po4-p, o-po4, bod mo2-n, mo3-n, d-po4-p, o-po4, bod mb3-n, ter mo2-n, mo3-n, d-po4-p, o-po4, bod mb3-n, ter mo2-n, mo3-n, d-po4-p, o-po4, bod mb3-n, d-po4-p, o-po4, bod mb3-n, ter mb3-n, d-po4-p, o-po4, bod mb3-n, ter mb3-n, d-po4-p, o-po4, bod mb3-n, ter mb3-n, d-po4-p, o-po4, bod mb3-n, ter mb3-n, ter mb3-n, d-po4-p, o-po4, bod mb3-n, ter mb3-n, d-po4-p, o-po4, bod mb3-n, ter mb3-n, ter</pre>	18187		Desc:	3Z-3 Deep	Matri	o Date:
<pre>M W W no2-n, no3-n, d-po4-p, o-po4, bod,</pre>	5	nh3-n,	alk, tds,		- 1 X	t nh3 p w/ H2SO4 (pH<2);
no2-n, no3-n, d-po4-p, o-po4, bod,Sample No:6Desc:B2-4 SurfaceAndrix:0Matrix:Matrix:		fur	vit		- 1 X - 1 X	oz Alk p w/ Cool to 6 C; xambervoa g w/ H3PO4/zero headspace;
<pre>Sample No: 6 Desc: BZ-4 Surface hh3-n, tkn, alk, tds, tss, po4-p, toc,</pre>			d-po4-p,	o-po4, bod,	- 1 - 1 × ×	bod p w/ Cool to 6 C; t no3no2 n w/ Cool to 6 C;
<pre>Sample No: b Desc: BZ-4 Surrace nh3-n, tkn, alk, tds, tss, po4-p, toc, M = 1 X 802 Alk p v C = 1 X 2xambervoa D = 1 X 1 bod p w/ E = 1 X bod p w/ E = 1 X 2t hod p w/ E = 1 X 250mlwicro F = 1 X 250mlwicro</pre>	0101		(A)			
<pre>n, tkm, alk, tds, tss, po4-p, toc, B - 1 X 8oz Alk p v C - 1 X 2xambervoa n, no3-n, d-po4-p, o-po4, bod, E - 1 X 1, bod p w/ B - 1 X 1, bod p w/ E - 1 X 250mlMicro F - 1 X 250mlMicro</pre>	18/11/2		Desc:	BZ-4 Surface	Matri	o Date: Time:
n, no3-n, d-po4-p, o-po4, bod, te M M F - 1 X 80z Alk p v C - 1 X 2xambervoa D - 1 X L bod p W E - 1 X 250mlwicro F - 1 X 250mlwicro	7		tkn, alk, tds, ts	ss, po4-p, toc,	- 1 X	
n, no $\overline{3}$ -n, d-po 4 -p, o-po 4 , bod, 1 E = 1 X pt no $3no2$ p W E = 1 X Pt no $3no2$ p F = 1 X 250mlMicro		M	in l		х х 	oz Alk p w/ Cool to 6 C; xambervoa g w/ H3P04/zero headspace;
ter NO O F - 1 X Pt no3no2 P W/ C F - 1 X 250mlMicro P W/		no2-n,	-11,	o-po4, bod,	- 1 X	bod p w/ cool to 6 C;
		fc, tc,	A a	0	х х 	t no3no2 p w/ Cool to 6 C; 50mlMicro p w/ Sterile/Na2S203;
		Mid				
				1		
				1001		
1 Sol		Relinquishe	d by:	Received by:	When the Received for laborato	ory by: Ruchell
by:///		Date: 7/2	115	145	Date: 7/23/15	Time: 1305
Time: 145 Date: 7/23/15 Time: 1						TWA.
Time: NYS Date: 7/23/15 Time						Sample entered by: YVY

	jbs 06/24/15	4:28:39 PM		M. J. REIDER ASSOCIATES, INC.	COFC.FRT Page: 3
				Chain of Custody	
	Account:	3157	Work Order: 006226 Work Order Description:	006226 Project Leader: rxw scription: Reltzville Reservoir	No: 260281
	Customer:	David Wertz		Remarks:	
	Address:	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd.,	zville Dam) house Rd., Ste. 600		
		Arlington VA 22201	01	Total Sampling Time (hours): B	Bottle Prep by:
	Phone:	703-387-5516	Ext:		
	Samplers:	WACIK			
18181	sample No:	7 Desc:	face	Matrix: o Date: 7/23	Date: 7/23/15
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Time: //30
	nn3-n,	tkn, alk, tds,	tss, po4-p, toc,	X X T T I	p w/ nzot (pres); c p w/ Cool to 6 C;
	- Con	the and n		X T T	2xambervoa g w/ H3P04/zero headspace; 1.hod n w/ Cool +0 6 C.
	111-2011	N N W	C FULL FULL	N N N N	cool to 6 C;
100	fc, tc,	NIQ	4	- 1 X	250mlMicro p w/ Sterile/Na2S203;
1472	Sample No:	8 Desc:	BZ-6 Surface	Matrix: o	2/1
. 1		nh3-n, tkn, alk, tds, ts	tss, po4-p, toc,	- 1 X	
	111	VI		B - 1 X 802 Alk p w/ Cool to 6 C; C - 1 X 2xambervoa c w/ H3P04/zer	ool to 6 C; / H3PO4/zero headspace:
	no2-n, no3	, no3-n, d-po4-p, o-po4,	o-po4, bodA	- 1 X	1 to 6 C;
	fc, tc,	e, 01 x0	AQ (SA	1 H 1 H 1 H	Pt no3no2 p w/ Cool to 6 C; 250mlMicro p w/ Sterile/Na2S203;
40	Samle No.	o Desr.	BZ-6 Mid-Denth	Matrix: o	Date: 7/23/15
11/2L	ONT DEPAINTON				Time: D745
A	nh3-n	nh3-n, tkn, alk, tds, ts	tss, po4-p, toc,	A - 1 X Pt nh3 P w/ H2SO4 (PH<2); $B - 1 X Roz Alk n w/ Cool Fo 6 C;$	
	M		-	к н н н н	/ H3P04/zero headspace;
	nó2-n,	no3-n, d-po4-p,	o-pod, bod	N N N	I bod p w/ Cool to 6 C; bt no3no2 n rool to 6 C;
		St.) QA	4 - 1	
			5	2	
		1	A	1	
	Relinmished by:	how how	Received by:	Received for laboratory by:	- hh-
	4	11-1-1		~	
	Date: /	1123118 - 1	rime: //45	Date: //2/// Time:	6121
				Tomes	Sample entered by: WC
					. 1~

L Cr			ראד משתבדארפים עיניע איז	
06/24/15	5 4:28:40 PM			Page: 4
			Chain of Custody	
Account:	t: 3157	Work Order: 006226 Work Order Description	006226 Project Leader: rxw scription: Beltzville Reservoir	No: 260281
Customer:	r: David Wertz		Remarks:	
Address:	Tetra Tech 1320 North Arlington V	(Beltzville Dam) Courthouse Rd., Ste. 600 2 22011		
1		+ -	Total Sampling Time (hours):Bot	Bottle Prep by:
Fnone: Samplers:	e: 103-38/-3216 s: WACIK	EXC:	Laboratory Receipt Temp: Laboratory Receipt Temp Unacceptable, Approved BY:	able, On Ice? Y N
19194 Sample No:	10 Desc:	BZ-6 Deep	Matrix: o Date: $\frac{7/23/15}{2}$	Date: 7/23/15
nh3-n,	tkn, alk, tds,	tss, po4-p, toc,	- 1 X Pt nh3 p w/ 1	Time: 0/45
P	Y		XX	Cool to 6 C; w/ H3P04/zero headspace;
n-20n	-n, no3-n, d-po4-p, o-po4,	Apod, Pool	х X H H I I I	L bod p w/ Cool to 6 C; Pt no3no2 p w/ Cool to 6 C;
A A Sample No:	11 Desc:	BZ-7 Surface	Matrix: o	Date: 7/23/15
nh3-n,	tkn, alk, tds,	tss, po4-p, toc,	- 1 X	Time: 0710
Nr.	M		- 1 X 8oz Alk p w/ Coc - 1 X 2xambervoa g w/	01 to 6 C; H3PO4/zero headspace;
no2-n,	no3+n,	d-po4-p, a-po4, body	D - 1 X L bod p w/ Cool t E - 1 X Pt no3no2 p w/ Co F - 1 X 250mlwicron w/ C	L bod p w/ Cool to 6 C; Pt no3no2 p w/ Cool to 6 C; ofomimienton w/ starile/Ma2s203.
			1	7/2 3/15
:ON atdure all'	T<	TTDATTOTW /-70		
nh3-n,	tkn, alk, tds,	tss, po4-p, toc,	A - 1 X Ft nh3 P w/ H2SO4 (pH<2); B - 1 X 8oz Alk p w/ Cool to 6 C	04 (pH<2); ol to 6 C;
	M dinchen		- 1 ×	2xambervoa g w/ H3P04/zero headspace; 1. hod n w/ Cool to 6 C.
		13	4 M H H I	Cool to 6 C;
		(7	
	// C	1		
Relingu: Date:	Relinquished by Artic Relinquest	Time: 1145	Date: 7/27/15 Time: 1	315
			Sample	Sample entered by: MV

COFC.PRT Page: 5	No: 260281	Bottle Prep by: C. If Temp Unacceptable, On Ice? Y N	Matrix: o Date: 7/23/15 Time: $7/23/15$ 1 X Pt nh3 p w/ H2SO4(pH<2); 1 X 8oz Alk p w/ Cool to 6 C; 1 X 2xambervoa g w/ H3PO4/zero headspace; 1 X L bod p w/ Cool to 6 C; 1 X Pt no3no2 p w/ Cool to 6 C;	ocratory by: Lettered by: MR
M. J. REIDER ASSOCIATES, INC. Chain of Custody	Project Leader: rxw Beltzville Reservoir Remarks:	s): By: peg	4 ほじし 取	Received for laboratory by: Date: 7/23/05
	Work Order: 006226 Work Order Description: Beltzville Reservoir Remarks: Weille Dam)	Bxt:	Sample No: 13 Desc: BZ-7 Deep nh3-n, tkn, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod M M M	Time: 1145
4:28:40 PM	3157 Work C Work C David Wertz Tetra Tech (Beltzville Dam)	TO3-387-5516 E	13 Desc: BZ-7 Deep tkn, alk, tds, tss, po4-p, // no3-n, d-po4-F, o-po4, bod M M M	J. J.
jbs 06/24/15 4	Account: Customer: Address:		JAA sample No: nh3-n, no2-n,	Relinquished by: Date: $\frac{7}{23}/1$





Attention: David Wertz					Date of	Penort -	08/28	2/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	hepore.	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	7-15-003280
1320 North Courthouse Rd., Ste	. 600				Lub ID.		5151	15-005280
Arlington VA 22201					Date Col	lected.	08/17	3/15 10:30
					Collecter		Clier	•
							ourer	
Sample Desc: BZ-1 Surface					Date Reco	eived:	08/13	3/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
				-				
BACTI								
MICROBIOLOGY								
Fecal Coliform	30	/100mL	2	1	SM 9222D	08/13	15:30	TNS
Total Coliform	1300	mpn/100ml	1	1	SM 9223B		11:30	
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/14	15:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	and the second second		HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/18	13:00	HRG
NITROGENS						1.1		
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/13	15:07	JCL
Nitrogen, Nitrate	0.75	mg/L	.05	1	EPA 353.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	17:24	
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	and the second sec	16:07	
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2		16:17	
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	08/17	21:31	ALD
RESIDUES								
Solids, Total Dissolved	43	mg/l	5	1	SM 2540C	08/18	13:15	ТМН
Solids, Total Suspended	137	mg/l	3	1	SM 2540D	A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR AND A CONTRA		ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	08/17	11:30	HRG

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Attention:	David Wertz					Date of H	Penort .	08/28	8/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:	tepore.		7-15-0032805
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	lected:	08/13	3/15 10:30
						Collected	By:	Clier	nt
Sample Desc:	BZ-1 Surface					Date Rece	eived:	08/13	3/15 14:40
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample placed in the incubator on O8/13/15 at 16:40

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Attention: David Wertz Reported To: Tetra Tech (Beltzville Dam)					Date of F Lab ID:	Report:	08/28	•
1320 North Courthouse Rd.,					Lap ID:		2121	-15-0032806
Arlington VA 22201					Date Coll Collected		08/13 Clier	3/15 10:45 ht
Sample Desc: BZ-2 Surface					Date Rece	eived:	08/13	5/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	38	/100mL	2	1	SM 9222D	08/13	15:30	TNS
Total Coliform	2000	mpn/100mL	1	1	SM 9223B	and the second	11:30	PLW
CHEMISTRY						00/11		
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	08/14	15:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	10.1 × 10.1 × 1	13:40	HRG
Phosphorus as P, Total	0.01	mg/l	.01	1	SM 4500P-E		13:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/13	15:22	JCL
Nitrogen, Nitrate	0.22	mg/l	.05	1	EPA 353.2		17:29	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	The second se	16:12	
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	100 C	16:18	JCL
OTHER						1	256.45	1000
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	<1	mg/l	1	1	SM5310 C		21:46	
RESIDUES		1.00						
Solids, Total Dissolved	38	mg/L	5	1	SM 2540C	08/18	13:15	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/18	13:15	ТМН
TITRATIONS					4			
Alkalinity, Total to pH 4.5	8	mg/l	1	1	SM 2320 B	08/17	11:30	HRG

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Attention:	David Wertz					Date of F	eport:	08/28	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0032806
	1320 North Courthouse Rd., Ste.	500							
	Arlington VA 22201					Date Coll	ected:	08/13	3/15 10:45
						Collected	By:	Clier	nt
Sample Desc:	BZ-2 Surface					Date Rece	ived:	08/13	3/15 14:40
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample placed in the incubator on 08/13/15 at 16:40

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Attention: David Wertz					Date of R	eport:	08/28	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-0032807
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 08:30
					Collected	By:	Clien	t
Sample Desc: BZ-3 Surface					Date Rece	ived:	08/13	/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI				1000000				
MICROBIOLOGY								
Fecal Coliform	5	/100mL	2	1	SM 9222D	08/13	15:30	TNS
Total Coliform	250	mpn/100ml	1	1	SM 9223B	08/14	11:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	08/14	15:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:40	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/18	13:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	. 05	1	D6919-03	08/13	15:37	JCL
Nitrogen, Nitrate	0.26	mg/L	. 05	1	EPA 353.2	08/13	17:30	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	08/13	16:13	JCL
Nitrogen, Total Kjeldahl	0.30	mg/L	.25	1	EPA 351.2	08/24	16:19	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.6	mg/l	1	1	SM5310 C	08/17	22:29	ALD
RESIDUES								
Solids, Total Dissolved	39	mg/l	5	1	SM 2540C	08/18	13:15	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/18	13:15	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	13	mg/l	1	1	SM 2320 B	08/17	12:15	HRG

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Attention:	David Wertz					Date of R	eport:	08/28	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0032807
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	08/13	8/15 08:30
						Collected	By:	Clier	nt
Sample Desc:	BZ-3 Surface					Date Rece	eived:	08/13	3/15 14:40
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

COMMENTS

O1 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.

O2 The total coliform sample placed in the incubator on 08/13/15 at 16:40

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Attention: David Wertz					Date of F	Report:	08/28	8/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-003280
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	lected:	08/13	/15 08:30
					Collected	By:	Clier	it
Sample Desc: BZ-3 Mid-Depth					Date Rece	eived:	08/13	/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY		*** *******						
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	08/14	15:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:40	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	08/18	13:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/13	15:51	JCL
Nitrogen, Nitrate	0.83	mg/L	.05	1	EPA 353.2	08/13	17:30	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	16:14	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	08/24	16:24	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.7	mg/l	1	1	SM5310 C	08/17	23:15	ALD
RESIDUES								
Solids, Total Dissolved	43	mg/L	5	1	SM 2540C	08/18	13:15	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/18	13:15	ТМН
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	08/17	12:15	HRG

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.

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Attention: David Wertz					Date of R	eport:	08/28	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	10000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-15-00328
1320 North Courthouse Rd., S	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 08:30
					Collected	By:	Clien	t
Sample Desc: BZ-3 Deep					Date Rece	ived:	08/13	/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY						-94955)	(and a second	
COLORMETRIC								
Phosphate as P, Ortho	0.06	mg/l	.01	1	SM 4500P-E	08/14	15:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:40	HRG
Phosphorus as P, Total	0.06	mg/l	.01	1	SM 4500P-E	08/18	13:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/13	16:06	JCL
Nitrogen, Nitrate	0.67	mg/L	.05	1	EPA 353.2	08/13	17:31	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	16:15	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	08/24	16:25	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	08/17	23:30	ALD
RESIDUES								
Solids, Total Dissolved	66	mg/l	5	1	SM 2540C	08/18	13:15	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/18	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	08/17	12:15	HRG

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.

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Attention: David Wertz					Date of R	eport:	08/28	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-00328
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 10:05
					Collected	By:	Clien	it
Sample Desc: BZ-4 Surface					Date Rece	ived:	08/13	/15 14:30
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	20	/100mL	2	1	SM 9222D	08/13	16:00	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	1.1.1.1.1.1.1.1	11:30	PLW
CHEMISTRY		a share a strong to						
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/14	15:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:45	HRG
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	08/18	13:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/13	16:21	JCL
Nitrogen, Nitrate	0.27	mg/L	. 05	1	EPA 353.2	08/13	17:32	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	08/13	16:16	JCL
Nitrogen, Total Kjeldahl	0.43	mg/l	.25	1	EPA 351.2	08/27	13:58	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.7	mg/l	1	1	SM5310 C	08/17	23:45	ALD
RESIDUES								
Solids, Total Dissolved	29	mg/L	5	1	SM 2540C	08/18	13:15	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/18	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	6	mg/L	1	1	SM 2320 B	08/17	12:15	HRG
Alkalinity, Total to pH 4.5	6	mg/l	1	1	SM 2320 B	08/17	12:15	HRG

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Attention:	David Wertz					Date of R	eport:	08/28	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0032810
	1320 North Courthouse Rd., Ste. 6	500							
	Arlington VA 22201					Date Coll	ected:	08/13	3/15 10:05
						Collected	By:	Clier	nt
Sample Desc:	BZ-4 Surface					Date Rece	ived:	08/13	3/15 14:30
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 placed in the incubator on 08/13/15 at 16:40

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1: 08/1 Clie	7-15-003281 3/15 09:50
1: 08/1 CLie 08/1	3/15 09:50 nt 3/15 14:40
Clie 08/1 Test	nt 3/15 14:40
Clie 08/1 Test	nt 3/15 14:40
08/1 Test	3/15 14:40
: Test	
	Analyst
: Time	Analyst
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
	(10000000)
13 16:00	TNS
14 11:30	PLW
14 15:20) HRG
19 13:45	HRG
18 13:05	HRG
13 16:35	i JCL
13 17:33	JCL
13 16:17	JCL
27 14:01	JCL
13 17:30) ALD
19 23:14	+ ALD
18 13:15	5 TMH
18 13:15	5 ТМН
17 12:15	HRG
/1 /1 /1 /1 /1	/13 16:17 /27 14:01 /13 17:30 /19 23:14 /18 13:15

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Attention:	David Wertz					Date of F	Report:	08/28	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0032811
	1320 North Courthouse Rd., Ste.	500							
	Arlington VA 22201					Date Coll	ected:	08/13	5/15 09:50
						Collected	By:	Clier	nt
Sample Desc:	BZ-5 Surface					Date Rece	eived:	08/13	8/15 14:40
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 placed in the incubator on 08/13/15 at 16:40

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Attention: David Wertz					Date of R	eport:	08/28	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-00328
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 07:45
					Collected	By:	Clien	it
Sample Desc: BZ-6 Surface					Date Rece	eived:	08/13	/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
ВАСТІ								
MICROBIOLOGY								
Fecal Coliform	5	/100mL	2	1	SM 9222D	08/13	16:00	TNS
Total Coliform	460	mpn/100ml	1	1	SM 9223B	08/14	11:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	08/14	15:20	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:45	HRG
Phosphorus as P, Total	0.03	mg/l	.01	1	SM 4500P-E	08/18	13:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/13	16:50	JCL
Nitrogen, Nitrate	0.27	mg/l	.05	1	EPA 353.2	08/13	17:34	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	16:18	JCL
Nitrogen, Total Kjeldahl	0.35	mg/l	.25	1	EPA 351.2	08/27	14:02	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.5	mg/L	1	1	SM5310 C	08/19	23:42	ALD
RESIDUES								
Solids, Total Dissolved	43	mg/L	5	1	SM 2540C	08/18	13:15	ТМН
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/18	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	08/17	12:30	HRG

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Attention:	David Wertz					Date of R	eport:	08/28	8/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0032812
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	08/13	5/15 07:45
						Collected	By:	Clier	nt
Sample Desc:	BZ-6 Surface					Date Rece	ived:	08/13	3/15 14:40
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

O2 The total coliform sample placed in the incubator on O8/13/15 at 16:40

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Attention: David Wertz					Date of R	eport:	08/28	/15
eported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-00328
1320 North Courthouse Rd., S	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 07:45
					Collected	By:	Clien	t
ample Desc: BZ-6 Mid-Depth					Date Rece	ived:	08/13	/15 14:40
WSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY	0						1000	
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/14	15:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:45	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	08/18	13:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/13	17:04	JCL
Nitrogen, Nitrate	0.76	mg/L	.05	1	EPA 353.2	08/13	17:35	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	16:19	JCL
Nitrogen, Total Kjeldahl	<.25	mg/l	.25	1	EPA 351.2	08/27	14:03	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.5	mg/L	1	1	SM5310 C	08/19	13:58	ALD
RESIDUES								
Solids, Total Dissolved	65	mg/L	5	1	SM 2540C	08/18	13:15	ТМН
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/18	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/l	1	1	SM 2320 B	08/17	12:30	HRG

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.

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Attention: David Wertz					Date of F	Report:	08/28	5/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		100 C 100 C 100 C	-15-003281
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 07:45
					Collected	By:	Clier	
Sample Desc: BZ-6 Deep					Date Rece	eived:	08/13	/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/14	15:25	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:45	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	08/18	13:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/13	17:09	JCL
Nitrogen, Nitrate	0.54	mg/L	.05	1	EPA 353.2	08/13	17:36	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	16:20	JCL
Nitrogen, Total Kjeldahl	0.29	mg/l	.25	1	EPA 351.2	08/27	14:04	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.1	mg/L	1	1	SM5310 C	08/19	14:42	ALD
RESIDUES								
Solids, Total Dissolved	58	mg/L	5	1	SM 2540C	08/18	13:15	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/18	13:15	тмн
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	08/17	12:30	HRG

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.

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Attention: David Wertz					Date of F	Report:	08/28	8/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-00328
1320 North Courthouse Rd., Ste	e. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 08:55
					Collected	By:	Clier	
Sample Desc: BZ-7 Surface					Date Rece	eived:	08/13	5/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	11	/100mL	2	1	SM 9222D	08/13	16:00	TNS
Total Coliform	1400	mpn/100ml	1	1	SM 9223B	A PROPERTY.	11:30	
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	08/14	15:25	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:50	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	08/18	13:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/13	18:17	JCL
Nitrogen, Nitrate	0.21	mg/L	.05	1	EPA 353.2		17:37	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	08/13	16:21	JCL
Nitrogen, Total Kjeldahl	0.47	mg/L	.25	1	EPA 351.2	08/27	14:05	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.7	mg/l	1	1	SM5310 C	08/19	14:57	ALD
RESIDUES								
Solids, Total Dissolved	42	mg/L	5	1	SM 2540C	08/18	13:40	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/18	13:15	ТМН
TITRATIONS		199						
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	08/17	12:30	HRG

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Attention:	David Wertz					Date of R	eport:	08/28	3/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0032815
	1320 North Courthouse Rd., Ste. 6	500							
	Arlington VA 22201					Date Coll	ected:	08/13	3/15 08:55
						Collected	By:	Clier	nt
Comple Deset	D7 7 Sunface								
sampte besc.	BZ-7 Surface					Date Rece	ived:	08/13	8/15 14:40
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 placed in the incubator on 08/13/15 at 16:40

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Attention: David Wertz					Date of F	Report:	08/28	3/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-00328
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	lected:	08/13	8/15 08:55
					Collected	By:	CLier	
Sample Desc: BZ-7 Mid-Depth					Date Rece	eived:	08/13	3/15 14:40
WSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
HEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	08/14	15:25	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	08/19	13:50	HRG
Phosphorus as P, Total	0.02	mg/l	.01	1	SM 4500P-E	08/18	13:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/13	18:32	JCL
Nitrogen, Nitrate	0.45	mg/L	.05	1	EPA 353.2	08/13	17:42	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	16:26	JCL
Nitrogen, Total Kjeldahl	0.30	mg/L	.25	1	EPA 351.2	08/27	14:08	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	2.3	mg/L	1	1	SM5310 C	08/19	15:26	ALD
RESIDUES								
Solids, Total Dissolved	43	mg/L	5	1	SM 2540C	08/18	13:40	тмн
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/18	13:15	тмн
TITRATIONS		1.125						
Alkalinity, Total to pH 4.5	10	mg/l	1	1	SM 2320 B	08/17	12:30	HRG

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.

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Attention: David Wertz					Date of R	eport:	08/28	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-00328'
1320 North Courthouse Rd., S	te. 600							
Arlington VA 22201					Date Coll	ected:	08/13	/15 08:55
					Collected	By:	Clien	t
Sample Desc: BZ-7 Deep					Date Rece	ived:	08/13	/15 14:40
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	08/14	15:25	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	13:50	HRG
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	08/18	13:10	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	08/13	18:47	JCL
Nitrogen, Nitrate	0.76	mg/l	.05	1	EPA 353.2	08/13	17:43	JCL
Nitrogen, Nitrite	0.06	mg/L	.05	1	EPA 353.2	08/13	16:27	JCL
Nitrogen, Total Kjeldahl	0.26	mg/L	.25	1	EPA 351.2	08/27	14:09	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/13	17:30	ALD
Total Organic Carbon	1.8	mg/L	1	1	SM5310 C	08/19	15:42	ALD
RESIDUES								
Solids, Total Dissolved	63	mg/L	5	1	SM 2540C	08/18	13:40	TMH
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	08/18	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	13	mg/l	1	1	SM 2320 B	08/17	12:45	HRG

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.

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COFC.PRT Page: 1		No: 261505	Rottle Preb bv:	U I	Date: Time: Time: Time: w/ H2SO4(pH<2); p w/ Cool to 6 C; a g w/ H3PO4/zero headspace; v/ Cool to 6 C; p w/ Cool to 6 C; p w/ Cool to 6 C; bate: K/3/15 Date: Cool to 6 C; bate: Cool to 6 C; a g w/ H3PO4/zero headspace; w/ Cool to 6 C; p w/ Cool t	by: <u>Aufued</u> <u>Leuisad</u> Time: <u>1440</u> Sample entered by: <u>MT</u>
M. J. REIDER ASSOCIATES, INC.	Chain of Custody	Work Order: 006226 Project Leader: rxw Work Order Description: Beltzville Reservoir	Remarks:	aipt Temp: 7 Deg Cnif	<pre>Matrix: 0 A - 1 X Pt nh3 p B - 1 X 802 Alk 1 C - 1 X 250mlMic D - 1 X 7 bod p 7 E - 1 X 7 bod p 7 A - 1 X Pt nh3 p B - 1 X Pt nh3 p B - 1 X Pt nh3 p C - 1 X 250mlMic F - 1 X 250mlMic A - 1 X Pt no3n0 F - 1 X 250mlMic A - 1 X Pt no3n0 F - 1 X 250mlMic A - 1 X Pt no3n0 F - 1 X 250mlMic A - 1 X Pt no3n0 F - 1 X 250mlMic A - 1 X Pt no3n0 F - 1 X Pt no3n0 F - 1 X 250mlMic </pre>	Received for laboratory by: Date: 8/3/15 Ti
3:15:37 PM		3157 Work Order: 006226 Work Order Description David Wertz	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201	1	<pre>1 Desc: BZ-1 Surface tkm, alk, tds, tss, po4-p, toc, 2 Desc: BZ-2 Surface tkm, alk, tds, tss, po4-p, toc, 2 Desc: BZ-3 Surface tkm, alk, tds, tss, po4-p, toc, 3 Desc: BZ-3 Surface tkm, alk, tds, tss, po4-p, toc, 03-m, d-po4-p, o-po4, bod, 03-m, d-po4-p, o-po4, bod, 03-m, d-po4-p, o-po4, bod,</pre>	ed by: Ang All Received by: 4
j1g 07/17/15 3		Account: Customer:	Address:	Phone: Samplers:	Add Sample No: 1 nh3-n, tkn, mailen, tkn, mo2-n, no3- fc, tc, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn, nh3-n, tkn,	Relinquished by: Date: 8/13/1

COFC. PRT Page: 2		No: 261505		Bottle Prep by: Unacceptable, On Ice N	rix: o Date: $\frac{8/1315}{7}$ Ft nh3 p w/ H2SO4 (pH<2); 802 Alk p w/ Cool to 6 C; 2xambervoa g w/ H3PO4/zero headspace; L bod p w/ Cool to 6 C; Pt n03no2 p w/ Cool to 6 C; Pt nh3 p w/ H2SO4 (pH<2); 802 Alk p w/ Cool to 6 C; $\frac{8/1315}{15}$ rime: $\frac{9330}{15}$ Pt nh3 p w/ H2SO4 (pH<2); 802 Alk p w/ Cool to 6 C; pt n03no2 p w/ Cool to 6 C; $\frac{8/13/5}{15}$ rime: $\frac{9330}{1005}$	y: <u>N:</u> <u>N:</u> <u>IHYC</u> <u>Rafaei</u> <u>Quitan</u> <u>Sample entered</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u> <u>M:</u>
M. J. REIDER ASSOCIATES, INC.	Chain of Custody	Project Leader: rxw Beltzville Reservoir	kemarks:	Total Sampling Time (hours): Laboratory Receipt Temp: 7 Deg CAIF Temp Approved By:	<pre>Matrix: o Matrix: o A = 1 X Pt nh3 p w/ B = 1 X 80z Alk p w C = 1 X 2xambervoa C = 1 X 2xambervoa D = 1 X L bod p w/ E = 1 X Pt no3no2 F Matrix: o Matrix: o D = 1 X L bod p w/ E = 1 X 80z Alk p w C = 1 X 2xambervoa D = 1 X L bod p w/ E = 1 X 1 bod p w/ E = 1 X 2001Micro F = 1 X 2001Micro</pre>	Received for laboratory by: Date: SURIS Ti
J19 07/17/15 3:15:37 PM		Account: 3157 Work Order: 006226 Projec Work Order Description: Beltzville Reservoir Customer: David Wertz	Address: Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201	Phone: 703-387-5516 Ext: Samplers: WACIK	<pre>Apply Sample No: 4 Desc: BZ-3 Mid-Depth nh3-n, tkm, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod, sample No: 5 Desc: BZ-3 Deep nh3-n, tkm, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod, ni3-n, tkm, alk, tds, tss, po4-p, toc, nh3-n, tkm, alk, tds, tss, po4-p, toc, fc, tc, no2-n, no3-n, d-po4-p, o-po4, bod, fc, tc,</pre>	Relinquished by: Acceived by: Acceived by: Acceived by: Date: 6/15/15 Time: 1130

COFC.PRT Page: 3		No: 261505			Bottle Prep by:	If Temp Unacceptable, On Icer I N	Matrix: o $\frac{bate: \frac{k}{13}/15}{\text{Time: 0450}}$	/ H2S	2xambervoa g w/ H3PO4/zero headspace; L bod p w/ Cool to 6 C;	Pt no3no2 p w/ Cool to 6 C; 250mlMicro p w/ Sterile/Na2S2O3;	Date:	Pt nh3 p w/ H2SO4 (pH<2); 807 21 b n w/ Cool to 6 C;	2xambervoa g w/H3P04/zero headspace; 1. bod p w/ Gool to 6 C:	Pt no3no2 p w/ Cool to 6 C; 250mlMicro p w/ Sterile/Na2S203;		Time: 0745 Pt nh3 p w/ H2SO4(pH<2);	8oz Alk p w/ Cool to 6 C; 2xambervoa g w/ H3PO4/zero headspace;	L bod p w/ Cool to 6 C; Pt no3no2 p w/ Cool to 6 C;			rime: 1446	
M. J. REIDER ASSOCIATES, INC.	Chain of Custody	Work Order: 006226 Work Order Description: Beltzville Reservoir	Remarks:		Total Sampling Time (hours):	Laboratory Receipt Temp: 7 Deg C.I. Approved By: 6.1	accentercon	- 1 X - 1 X	H H	ч н н н н х	Mat:	- 1 - 1	× × ×	N N N N	Mat	- 1 X	н н н 1	ж ж - т- - т		Received for laboratory by:	Date: 2113111	
3:15:37 PM			David Wertz	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201		WACIK WACI	Sample No: 7 Desc: BZ-5 Surface String Sample No: 7 Desc: BZ-5 Surface String Sample No: 7 Desc: BZ-5 Surface String Stri	n, alk, tds, tss, po4-p, toc,	no2-n, no3-n, d-po4-p, o-po4, bod,	to a	8 Desc: BZ-6 Surface	n, alk, tds, tss, po4-p, toc,	hod hod hod	the second	9 Desc: BZ-6 Mid-Depth	n, alk, tds, tss, po4-p, toc,		no3-n, d-po4-p, o-po4, bod,	1	, o later	75 Time: //36	
J1g 07/17/15 3:15			Customer: Dav	Address: Tet 132 Arl		Finne: 703 Samplers:	RAV sample No: 7	nh3-n, tkn,	no2-n, no3	fc, tc,		nh3-n, tkn,	N. 203-11 103	fc, tc,	20	رتار مربق مربق مربق مربق مربق مربق مربق مرب	VV	no2-n, no3		Relinquished by:	Date: 8/13/15	

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(Dath of Cutody (Cutody: 100226 (Cutody: 100226 <th <="" colspa="2" th=""><th>work Order: 006226 Work Order Descript (Beltzville Dam) Courthouse Rd., Ste. 600 VA 22201 16 Ext:</th><th>t Leader:</th><th></th></th>	<th>work Order: 006226 Work Order Descript (Beltzville Dam) Courthouse Rd., Ste. 600 VA 22201 16 Ext:</th> <th>t Leader:</th> <th></th>	work Order: 006226 Work Order Descript (Beltzville Dam) Courthouse Rd., Ste. 600 VA 22201 16 Ext:	t Leader:	
3157 Work Order: 00626 Project Leader: xw David Wertz Work Order: bascription: Beltzville Reservoir Remarks: Tetra Tech (Beltzville Dam) Total Sampling Time (hours): 1320 methods 1320 North Countings Miles: 500 Total Sampling Time (hours): David Order 1320 North Countings Miles: 500 Total Sampling Time (hours): Dag Grider: xw 100 Desc: B2-5 Deep Total Sampling Time (hours): Dag Grider: xw 10 Desc: B2-7 Suffect Ext: Laboratory Receipt Temp: Dag Grider: xw 11 Desc: B2-7 Suffect Ext: Dag Proved Dy: 12 Desc: B2-7 Suffect Ext: Ext: Ext: 12 Desc: B2-7 Suffect Ext: Ext: Ext: Ext: 12 Desc: B2-7 Mid-Depth Ext:	Work Order: 006226 Work Order Descript (Beltzville Dam) Courthouse Rd., Ste. 600 VA 22201 16 Ext:	t Leader:		
David Wertz Tetra Tech (Baltrville Dam) Tetra Tech (Baltrville Dam) Tetra Tech (Baltrville Dam) Total Sampling Time (houre): Total Sampling Time (hour	z (Beltzville Dam) courthouse Rd., Ste. 600 VA 22201 16 Ext: CiK			
Tetra Tech (Beltrville Dam) Tetra Tech Countinue Rd., ste. 600 Arihington V, 2516 Ext: Total Sampling Time (hours): Total Sampling (hours): Total	(Beltzville Dam) Courthouse Rd., Ste. 600 VA 22201 16 Ext: Oi K	. 54.20		
703-387-5516 Ext: Laboratory Receipt Tange Tourner 100.201 10 Desc: B^{2} 6 Deep Mat thu, alk, tds, tss, po4-p, toc, moden, d-po4-p, B^{2} 1 ×	16 Ext:	. (int month of the	
10 Desc: $B = 0$ Deep Lkn, alk, tds, tss, pot-p, toc, $B = 1M = 1 \times 0M =$		d By: Deg C If Temp Unacce	ptable, on Ice?	
then, alk, tds, tss, po4-p, toc, 11 Desc: B^{-7} Surface 11 Desc: B^{-7} Surface 11 Desc: B^{-7} Surface 11 Desc: B^{-7} Surface 12 Desc: B^{-7} Surface 12 Desc: B^{-7} Surface 12 Desc: B^{-7} Mid-Depth 12 Desc: B^{-7} Mid-Depth 12 Desc: B^{-7} Mid-Depth thm, alk, tds, tss, po4-p, toc, 12 Desc: B^{-7} Mid-Depth thm alk, tds, tss, po4-p, toc, 12 Desc: B^{-7} Mid-Depth thm alk, tds, tss, po4-p, toc, 12 Desc: B^{-7} Mid-Depth thm alk, tds, tss, po4-p, toc, 12 Desc: B^{-1} Mid-Depth 12 Desc: B^{-1} Mid-Depth 12 Depthe 12 Desc: B^{-1} Mid-Depth 12 Depthe 12 Desc: B^{-1} Mid-Depth 12 Depthe 12	10 Desc:	matrix: o	Date: 8/13/15	
moden, d-pot-proven body moden, d-pot-proven body 11 Desc: BZ-7 Surface thm, alk, tds, tss, pot-p, too, 12 Desc: BZ-7 Mid-Depth thm, alk, tds, tss, pot-p, too, 12 Desc: BZ-7 Mid-Depth thm, alk, tds, tss, pot-p, too, moden, d-pot-p, or pot, bod, 13 Desc: BZ-7 Mid-Depth thm, alk, tds, tss, pot-p, too, moden, d-pot-p, or pot, bod, moden, d-pot-p, for thm, BZ-1 X moden, d-pot-p, for thm, BZ-1 X moden, for thm, BZ-1 X moden		- 1 - 1 X X	2504 (pH<2); 2001 to 6 C;	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	No3-n.	х X 1 1 1	<pre>w/ H3P04/zero headspace; ol to 6 C;</pre>	
11 Desc: $B2^{-7}$ Surface then, alk, tds, tss, po4-p, toc, $B = 11 \times 2^{-1} \times 2^$		- 1 X	/ Cool to 6 C; held	
the alk tds, tss, po4-p, toc, $a = 1 \times 2$ $a = 1 \times 2$	11 Desc:		1	
d-po4-p, $\frac{p-po4}{p}$, $\frac{p-po4}{p}$, $\frac{p-po4}{p}$, $\frac{p-po4}{p}$, $\frac{p-1}{p}$,	nh3-n, tkn, alk, tds, tss, po4-p, toc,	- 1 X X X X X	2204 (pH<2); 2001 to 6 C;	
i. 12 Desc: $BZ-7$ Mid-Depth i. 12 Desc: $BZ-7$ Mid-Depth i. 12 Desc: $BZ-7$ Mid-Depth i. 12 Desc: $BZ-7$ Mid-Depth Mat i. 12 Desc: $BZ-1$ Mat i. 20 Desc	no2-n, $no3-n$, $d-po4-p$, $o-po4$, bod,	х х - 1 - 1	<pre>w/ H3P04/zero headspace; ol to 6 C;</pre>	
in the last test post post post for the last test post post post post post post post po	fe, te,	- 1 X Pt no3no2 I - 1 X 250mlMicro	Cool to 6 / Sterile/1	
, thn, alk, tds, tss, po4-p, toc, no3-n, d-po4-p, o-po4, bod, no3-n, d-po4-p, o-po4, bod, $B = 1 \times D =$. 12		8	
d-po4. pod, bod, d-po4. bod, B - 1 × D - 1 × B - 1 ×	, tkn, alk, tds, tss, po4-p,	к т ч	2SO4 (pH<2);	
$\frac{a - po 4 \cdot p \cdot 0}{h} = \frac{1}{h} =$	Mr	и X X H H F	Cool to 6 C; w/ H3PO4/zero headspace;	
Time: 130 Time: 130 Date: <u>21315</u> Time: 1440	-m, mos-m, a-boa-p, o-poa,	4 X H H I I	/ Cool to 6 C;	
$\frac{h_{yy}}{r_{ime}} \frac{1}{110} \frac{1}{100} \frac{1}{$				
Time: 130 1115 115 115 115 115 115 115 115 115 115 115 115 115 115 11		V V	Ruhal Jui	
5	Thy 6 1	for laboratory b		
	1115	Samp1	Sample entered by: MT	

M. J. REIDER ASSOCIATES, INC. Chain of Custody	Work Order: 006226 Project Leader: rxw Work Order Description: Reltrville Reservoir	Remarks.	PARCE Shishis	Total Sampling Time (hours); Laboratory Receipt Temp: Theg G. If Temp Unacceptable, On Ice	Matrix: o Date: 8//3//5 Time: Time: 8//3//5 A - 1 X Pt nh3 p w/ H2SO4 (pH22); B - 1 X 28amerkog w/ Cool to 6 C; C - 1 X Zaamerkog w/ Cool to 6 C; D - 1 X L bod p w/ Cool to 6 C; E - 1 X Pt no3no2 p w/ Cool to 6 C;	Received by: Received for laboratory by: Refael Bate: 8/18/1 Time: 1440
3:15:38 PM	3157 Work Order	David Wertz	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. Arlington VA 22201	703-387-5516 Ext: WACIK	Sample No: 13 Desc: BZ-7 Deep nh3-n, tkn, alk, tds, tss, po4-p, toc, M no2-n, no3-n, d-po4-p, o-po4, bod,	1 2000 DD Time: 1130
j1g 07/17/15 3:1	Account: 3	Customer: Da	Address: Te 13 Ar	Phone: 70 Samplers:	sample No: 13 nh3-n, tkn, a MU no2-n, no3-n,	Relinquished by:





Attention: David Wertz					Date of H	Report:	09/11	1/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	Concerned and		7-15-003617
1320 North Courthouse Rd.,	Ste. 600						200	
Arlington VA 22201					Date Coll	lected:	08/31	1/15 11:50
					Collected	By:	Clier	
Sample Desc: BZ-1 Surface					Date Rece	eived:	08/31	1/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	13	/100mL	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B		11:40	
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/01	16:10	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/03	12:46	JCL
Nitrogen, Nitrate	0.70	mg/l	.05	1	EPA 353.2	09/02	15:24	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:38	JCL
Nitrogen, Total Kjeldahl	0.30	mg/l	.25	1	EPA 351.2	09/08	16:07	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.8	mg/l	1	1	SM5310 C	09/02	22:37	ALD
RESIDUES								
Solids, Total Dissolved	83	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	09/01	14:30	HRG

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:

Richard Wheeler

Page 1 of 2

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Attention:	David Wertz					Date of R	eport:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036178
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	08/31	/15 11:50
						Collected	By:	Clier	nt
Sample Desc:	BZ-1 Surface					Date Rece	ived:	08/31	1/15 13:45
PWSID: 313084	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by: Richard Wheeler

Page 2 of 2

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NELAC accreditations for various drinking water, wastewater and solid & chemical materials analytes.







Attention: David Wertz					Date of R	Report:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036179
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 11:35
					Collected	By:	Clien	t
Sample Desc: BZ-2 Surface					Date Rece	eived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	16	/100mL	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	980	mpn/100mL	1	1	SM 9223B	09/01	11:40	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	13:01	JCL
Nitrogen, Nitrate	0.14	mg/l	.05	1	EPA 353.2	09/02	15:27	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:41	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	09/08	16:10	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	09/02	22:52	ALD
RESIDUES								
Solids, Total Dissolved	67	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	8	mg/L	1	1	SM 2320 B	09/01	14:45	HRG

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Attention:	David Wertz					Date of R	eport:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0036179
	1320 North Courthouse Rd., Ste. 6	600							
	Arlington VA 22201					Date Coll	ected:	08/31	1/15 11:35
						Collected	By:	Clier	nt
Sample Desc:	BZ-2 Surface					Date Rece	ived:	08/31	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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.

- O2 The total coliform sample was placed in the incubator on 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Reviewed and Approved by:

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Attention: David Wertz Reported To: Tetra Tech (Beltzville Dam)					Date of R Lab ID:	eport:	09/11 3157	/15 -15-0036180
1320 North Courthouse Rd., Arlington VA 22201	Ste. 600				Date Coll Collected		08/31 Clien	/15 09:10 t
Sample Desc: BZ-3 Surface					Date Rece	ived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	360	mpn/100mL	1	1	SM 9223B	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11:40	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/l	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	0.01	mg/l	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/03	13:15	JCL
Nitrogen, Nitrate	0.14	mg/l	.05	1	EPA 353.2	09/02	15:28	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:42	JCL
Nitrogen, Total Kjeldahl	0.28	mg/l	.25	1	EPA 351.2	09/08	16:11	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.6	mg/L	1	1	SM5310 C	09/02	23:07	ALD
RESIDUES								
Solids, Total Dissolved	29	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	11	mg/L	1	1	SM 2320 B	09/01	14:45	HRG

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Attention:	David Wertz					Date of R	eport:	09/11	1/15	
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0036180	1
	1320 North Courthouse Rd., Ste. 6	500								
	Arlington VA 22201					Date Coll	ected:	08/31	1/15 09:10	
						Collected	By:	Clier	nt	
Sample Desc:	BZ-3 Surface					Date Rece	ived:	08/31	1/15 13:45	
PWSID: 31308	43			Rep	Dilutn		Test	Test		
		Result	Unit	Limit	Factor	Procedure	Date	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 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of R	eport:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-003618
1320 North Courthouse Rd., S	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 09:10
					Collected	By:	Clien	1
Sample Desc: BZ-3 Mid-Depth					Date Rece	ived:	08/31	1/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	100 M - 10	14:20	HRG
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	13:30	JCL
Nitrogen, Nitrate	0.71	mg/l	.05	1	EPA 353.2	09/02	15:29	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:43	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	09/08	16:12	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.0	mg/l	1	1	SM5310 C	09/02	23:22	ALD
RESIDUES								
Solids, Total Dissolved	70	mg/L	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	- 1. S. M. M. M.	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	09/01	15:00	HRG

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.

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Attention:	David Wertz					Date of R	eport:	09/11	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036181
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	ected:	08/31	/15 09:10
						Collected	By:	Clier	nt
Sample Desc:	BZ-3 Mid-Depth					Date Rece	ived:	08/31	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst

02 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.

03 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

- 04 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 05 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of F	eport:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-003618
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 09:10
					Collected	By:	Clien	nt
Sample Desc: BZ-3 Deep					Date Rece	ived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/03	13:45	JCL
Nitrogen, Nitrate	0.55	mg/L	.05	1	EPA 353.2	09/02	15:30	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:44	JCL
Nitrogen, Total Kjeldahl	0.33	mg/L	.25	1	EPA 351.2	09/08	16:13	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C	09/03	00:38	ALD
RESIDUES								
Solids, Total Dissolved	71	mg/L	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	4	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	09/01	15:00	HRG

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.

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Attention:	David Wertz					Date of F	eport:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036182
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	.ected:	08/31	1/15 09:10
						Collected	By:	Clier	nt
Sample Desc:	BZ-3 Deep					Date Rece	eived:	08/31	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
02 T	he dissolved oxygen depletion of	the SM5210B dilu	tion water						

blank was greater than 0.2 mg/L.

03 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of F	eport:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:			-15-003618
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 11:20
					Collected	By:	Clien	•
Sample Desc: BZ-4 Surface					Date Rece	eived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	11	/100mL	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	09/01	11:40	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	0.01	mg/l	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	13:59	JCL
Nitrogen, Nitrate	0.27	mg/L	.05	1	EPA 353.2	09/02	15:31	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:45	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	09/08	16:14	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.5	mg/l	1	1	SM5310 C	09/03	00:49	ALD
RESIDUES								
Solids, Total Dissolved	34	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	6	mg/L	1	1	SM 2320 B	09/01	15:00	HRG

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Attention:	David Wertz					Date of R	eport:	09/11	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036183
	1320 North Courthouse Rd., Ste. 6	600							
	Arlington VA 22201					Date Coll	ected:	08/31	/15 11:20
						Collected	By:	Clier	nt
Sample Desc:	BZ-4 Surface					Date Rece	ived:	08/31	/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of R	eport:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036184
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 11:10
					Collected	By:	Clier	t
Sample Desc: BZ-5 Surface					Date Rece	ived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	140	/100ml	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B		11:40	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/l	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	0.03	mg/l	.01	1	SM 4500P-E	09/01	14:00	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	14:14	JCL
Nitrogen, Nitrate	1.12	mg/l	.05	1	EPA 353.2	09/02	15:32	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:46	JCL
Nitrogen, Total Kjeldahl	0.43	mg/l	.25	1	EPA 351.2	09/08	16:17	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.1	mg/l	1	1	SM5310 C	09/03	10:04	ALD
RESIDUES								
Solids, Total Dissolved	101	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	10	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	14	mg/l	1	1	SM 2320 B	09/01	15:15	HRG

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Attention:	David Wertz					Date of R	eport:	09/11	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036184
	1320 North Courthouse Rd., Ste. 6	600							
	Arlington VA 22201					Date Coll	ected:	08/31	/15 11:10
						Collected	By:	Clier	nt
Sample Desc:	BZ-5 Surface					Date Rece	ived.	08/31	/15 13:45
sampte bese.						Date Nete	iveu.	00/5	/15 15.45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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								ar. 2
Attention: David Wertz					Date of R	Report:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-003618
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	.ected:	08/31	/15 08:10
					Collected	By:	Clien	it
Sample Desc: BZ-6 Surface					Date Rece	eived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	290	mpn/100ml	1	1	SM 9223B	A REAL PROPERTY.	11:40	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	09/01	16:15	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	09/01	14:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	14:28	JCL
Nitrogen, Nitrate	0.14	mg/l	.05	1	EPA 353.2	09/02	15:33	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:47	JCL
Nitrogen, Total Kjeldahl	0.36	mg/l	.25	1	EPA 351.2	09/08	16:18	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.6	mg/l	1	1	SM5310 C	09/03	01:19	ALD
RESIDUES								
Solids, Total Dissolved	64	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	09/01	15:15	HRG

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Attention:	David Wertz					Date of R	eport:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036185
	1320 North Courthouse Rd., Ste. 6	00							
	Arlington VA 22201					Date Coll	ected:	08/31	/15 08:10
						Collected	By:	Clier	nt
Sample Desc:	BZ-6 Surface					Date Rece	ived:	08/31	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	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 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

Distribution of Reports: Gregory Wacik - USACE (Beltzville Dam)

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Attention: David Wertz					Date of F	eport:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		and the second	-15-00361
1320 North Courthouse Rd., S	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 08:10
					Collected	By:	Clier	
Sample Desc: BZ-6 Mid-Depth					Date Rece	ived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/01	16:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:20	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/01	14:05	HRG
NITROGENS						-		
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/03	14:43	JCL
Nitrogen, Nitrate	0.71	mg/L	.05	1	EPA 353.2	09/02	15:33	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/01	14:50	JCL
Nitrogen, Total Kjeldahl	0.28	mg/l	.25	1	EPA 351.2	09/08	16:19	JCL
OTHER		a.						
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	<1	mg/L	1	1	SM5310 C		01:34	ALD
RESIDUES								
Solids, Total Dissolved	68	mg/L	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS						C. S. Marson	10000	A VILLA
Alkalinity, Total to pH 4.5	10	mg/l	1	1	SM 2320 B	09/01	15:30	HRG

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.

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Richard Wheeler

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Attention:	David Wertz					Date of I	Report:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-0036186
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Col	lected:	08/3	1/15 08:10
						Collected	d By:	Clier	nt
Sample Desc:	BZ-6 Mid-Depth					Date Reco	eived:	08/3′	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
02 T	he dissolved oxygen depletion of	the SM5210P dilu	tion upton						

12 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.

03 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of R	eport:	09/11	/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036187
1320 North Courthouse Rd., St	te. 600							
Arlington VA 22201					Date Coll	ected:	08/31	/15 08:10
					Collected	By:	Clien	t
Sample Desc: BZ-6 Deep					Date Rece	ived:	08/31	/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY					2-30-3-1-0-0	-4256		
COLORMETRIC								
Phosphate as P, Ortho	0.09	mg/L	.01	1	SM 4500P-E	09/01	16:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:25	HRG
Phosphorus as P, Total	0.11	mg/L	.01	1	SM 4500P-E	09/01	14:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	14:58	JCL
Nitrogen, Nitrate	0.55	mg/L	.05	1	EPA 353.2	09/02	15:38	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/01	14:51	JCL
Nitrogen, Total Kjeldahl	0.62	mg/L	.25	1	EPA 351.2	09/09	11:29	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.2	mg/L	1	1	SM5310 C	09/03	01:48	ALD
RESIDUES								
Solids, Total Dissolved	77	mg/L	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	34	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/l	1	1	SM 2320 B	09/01	15:30	HRG

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.

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Attention:	David Wertz					Date of I	Report:	09/11	/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036187
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Col	lected:	08/31	/15 08:10
						Collected	By:	Clier	nt
Sample Desc:	BZ-6 Deep					Date Rec	eived:	08/31	1/15 13:45
PWSID: 313084	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
02 TI	he dissolved oxygen depletion of	the SM5210B di	Lution vate					199	

blank was greater than 0.2 mg/L.

03 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz Reported To: Tetra Tech (Beltzville Dam)					Date of R Lab ID:	eport:	09/11 3157	/15 -15-0036188
1320 North Courthouse Rd., Arlington VA 22201	Ste. 600				Date Coll Collected		08/31 Clien	/15 09:55 t
Sample Desc: BZ-7 Surface					Date Rece	ived:	08/31	/15 13:45
PWSID: 3130843	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	08/31	14:30	PLW
Total Coliform	770	mpn/100ml	1	1	SM 9223B	09/01	11:40	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/01	16:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/01	14:25	HRG
Phosphorus as P, Total	<.01	mg/l	.01	1	SM 4500P-E	09/01	14:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/l	.05	1	D6919-03	09/03	15:41	JCL
Nitrogen, Nitrate	0.09	mg/l	.05	1	EPA 353.2	09/02	15:39	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	09/01	14:52	JCL
Nitrogen, Total Kjeldahl	0.36	mg/L	.25	1	EPA 351.2	09/09	11:30	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.6	mg/L	1	1	SM5310 C	09/03	02:03	ALD
RESIDUES								
Solids, Total Dissolved	49	mg/l	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/l	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS								
Alkalinity, Total to pH 4.5	10	mg/l	1	1	SM 2320 B	09/01	15:30	HRG

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Attention:	David Wertz					Date of F	eport:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036188
	1320 North Courthouse Rd., Ste. 6	600							
	Arlington VA 22201					Date Coll	ected:	08/31	/15 09:55
						Collected	By:	Clier	nt
Sample Desc:	BZ-7 Surface					Date Rece	eived:	08/31	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
							ستصحبر		

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 08/31/15 at 16:00.
- 03 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.
- 04 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of I	Report:	09/11	1/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:	-	3157	7-15-003618
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Col	lected:	08/31	1/15 09:55
					Collected	d By:	Clier	
Sample Desc: BZ-7 Mid-Depth					Date Rece	eived:	08/31	1/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/01	16:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E		14:25	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/01	14:05	HRG
NITROGENS						1		
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/03	15:57	JCL
Nitrogen, Nitrate	0.66	mg/L	.05	1	EPA 353.2	09/02		
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/01	14:55	JCL
Nitrogen, Total Kjeldahl	0.32	mg/L	.25	1	EPA 351.2	09/09	11:31	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.3	mg/L	1	1	SM5310 C	09/03	02:33	ALD
RESIDUES						1. 2. C.		
Solids, Total Dissolved	68	mg/L	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	1. 1. 1. 1. A. I.	13:15	
TITRATIONS		-				5.34 5.5	1000.02	
Alkalinity, Total to pH 4.5	13	mg/l	1	1	SM 2320 B	09/01	15:45	HRG

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.

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Attention:	David Wertz					Date of	Report:	09/1	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	7–15–0036189
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Col	lected:	08/3	1/15 09:55
						Collecter	d By:	Clier	nt
Sample Desc:	BZ-7 Mid-Depth					Date Rec	eived:	08/31	1/15 13:45
PWSID: 31308	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
02 T	he dissolved ovvaen depletion of	+ha CME2100 d		-			2007		

02 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.

03 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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Attention: David Wertz					Date of F	Report:	09/11	1/15
Reported To: Tetra Tech (Beltzville Dam)					Lab ID:		3157	7-15-003619
1320 North Courthouse Rd.,	Ste. 600							
Arlington VA 22201					Date Coll	ected:	08/31	1/15 09:55
					Collected	By:	Clier	
Sample Desc: BZ-7 Deep					Date Rece	eived:	08/31	1/15 13:45
PWSID: 3130843			Rep	Dilutn		Test	Test	
	Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/01	16:20	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	1. *** . * . * . * . * . * . * . * . * .		HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	the state of the s	14:05	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/03	16:12	JCL
Nitrogen, Nitrate	0.54	mg/l	.05	1	EPA 353.2	09/02	15:41	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	1.	14:56	
Nitrogen, Total Kjeldahl	0.30	mg/L	.25	1	EPA 351.2	09/09		
OTHER		1						
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/31	15:00	EMW
Total Organic Carbon	1.4	mg/L	1	1	SM5310 C	09/03	03:18	ALD
RESIDUES		1.26						
Solids, Total Dissolved	37	mg/L	5	1	SM 2540C	09/02	09:35	ALD
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/04	13:15	ALD
TITRATIONS						and the	C. Careca	
Alkalinity, Total to pH 4.5	13	mg/l	1	1	SM 2320 B	09/01	15:45	HRG

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.

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Attention:	David Wertz					Date of F	Report:	09/11	1/15
Reported To:	Tetra Tech (Beltzville Dam)					Lab ID:		3157	-15-0036190
	1320 North Courthouse Rd., Ste.	600							
	Arlington VA 22201					Date Coll	.ected:	08/31	/15 09:55
						Collected	By:	Clier	nt
Sample Desc:	BZ-7 Deep					Date Rece	eived:	08/31	1/15 13:45
PWSID: 313084	43			Rep	Dilutn		Test	Test	
		Result	Unit	Limit	Factor	Procedure	Date	Time	Analyst
02 TI	he dissolved ovvgen depletion of								

02 The dissolved oxygen depletion of the SM5210B dilution water blank was greater than 0.2 mg/L.

03 The BOD glucose/glutamic acid was biased low however all other quality control samples were within acceptable limits.

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	rxw 08/07/15	rxw 08/07/15 8:01:09 AM		M. J. REIDER ASSOCIATES, INC.	COFC. PRT Page: 1
				Chain of Custody	
	Account:	3157	Work Order: 006226 Projection Projection	Project Leader: rxw	No: 262656
	Customer:	David Wertz	WOLK UTGET DESCLIPTION	. DellZville reservoir Remarks:	
	Address:	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlindton V3 22201	rille Dam) Duse Rd., Ste. 600		
	7			Total Sampling Time (hours):	Bottle Prep by:
	Samplers:	M		eipt Ap	
36178	36/78 sample No:	1 Desc: BZ	besc: BZ-1 Surface	Matrix: o $\frac{S/3i}{Time:}$	Date: 8/3/15
	nh3-n	nh3-n, tkn, alk, tds, tss, po4-p, toc,	3, po4-p, toc,	× × 7 7	Pt nh3 p w/ H2SO4 (pH<2); Boz Alk n w/ Cool to 6 C;
	no2-n	no2-n, no3-n, d-po4-p, o-po4, hod	pod, bod	х х х и к к к	2xambervoa g w/ H3P04/zero headspace; L bod p w/ Cool to 6 C; Pt no3no2 p w/ Cool to 6 C;
36179	fc, the	tto, reference BZ	Desc. B7-2 Surface	- 1 X Mat	w/ Sterile/Na2S203; Date: 8/31/NS
	nh3-n	tkn, alk,	s, po4-p, toc,	- 1 X	Time: 1135 Pt nh3 p w/ H2SO4 (pH<2);
				- 1 X - 1 X	8oz Alk p w/ Cool to 6 C; 2xambervoa g w/ H3PO4/zero headspace;
	fc, to	fc, td, hold - po4-p, o-po4, bod	po4, bod,	D - 1 X L bod p w/ Coo E - 1 X Pt no3no2 p w/ F - 1 X 250mlMicro p w	L bod p w/ Cool to 6 C; Pt no3no2 p w/ Cool to 6 C; 250mlMicro p w/ Sterile/Na2S203;
361 SO Sample No:	Sample No	m	Desc: BZ-3 Surface	Matrix: o	Date: 8/31/15
	nh3-n	nh3-n, tkn, alk, tds, tss, po4-p, toc,	s, po4-p, toc,	- 1 ×	p w/ H2SO4 (pH<2);
			1 614 614	* * * 	Boz Alk p W/ COOl to b C; 2.xambervoa g W/ H3P04/zero headspace; 2.a
	fc, tc,	nos-n, a-po4-p	o-pot, poar	E - 1 X Pt no3no2 P E - 1 X 250mlMicro P	Pt no3no2 p w/ cool to 6 C; 250mlMicro p w/ Sterile/Na2S203;
	PIO	A Ho			
	-		с Г		
	beds ince log	Mut have been	Del Barritrad Will	Received for laboratory by:	har 1 de
	Date: 8	2-11	Time: 1215	Date: 8/31/15 Time:	1345
				Sam	Sample entered by: MTC

3157 Work Order: 006256 Chain of Custody: Beitzville Reservoir: Bavid Wertz Work Order: 006256 Excident Leader: xw Tetra Tech (Beitzville Dam) Remarks: Excident Leader: xw Tetra Tech (Beitzville Dam) Remarks: Excident Leader: xw Tetra Tech (Beitzville Dam) Remarks: Excident Leader: xw 703-307-5516 Exci Description: Peeds through the thours: 703-307-5516 Exci Laboratory Receipt Temp: 4. Deg C. I 703-307-5516 Exci Laboratory Receipt Temp: 4. Deg C. I 703-307-5516 Exci Laboratory Receipt Temp: 4. Deg C. I 703-307-5516 Exci Laboratory Receipt Temp: 4. Deg C. I 703-404 Peec: 12x Acting 703-14 Acting Acting 703-11 Acting Acting 703-11 Acting	3157 Chain of Custofy 3157 Work Order: 006256 Eroject Leader: now David Wertz Work Order: 006256 Eroject Leader: now Term Tech Fast Twille Damin Remarks: Eroject Leader: now Term Tech Fast Twille Damin Remarks: Eroject Leader: now Term Tech Fast Twille Damin Remarks: Remarks: 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-397-5146 Ext: Libboratory Receipt Temm: 6 Deg C. I 703-114 Libboratory Receipt Temp: 6 Deg C. I Libboratory Receipt Temp: 6 Deg C. I 703-114 Libboratory Receipt Temp: 7 Deg C. I Libboratory Receipt Temp: 7 Deg C. I 703-11	1357 Chain of Custofy Index: 1006256 Chain of Custofy Index: 1006256 The Condex:	08/07/15 8	8:01:10 AM	M. U. KELDEK ASSOCIATES, INC.	Page: 2
3157 Work Order: 00626 Project Leader: INW David Wertz Work Order: Description: Beltzville Reservoir Project Leader: INW Tetra Tech (Beltzville Dam) Tetra Tech (Beltzville Dam) Remarks: 1303-387-5516 Ext: Hont Store Proved By: 1003-387-5516 Ext: Laboratory Receipt Temp: E Deg C. I 1003-387-5516 Ext: Laboratory Receipt Temp: E Deg C. I 1003-387-5516 Ext: Laboratory Receipt Temp: E Deg C. I 1003-387-5516 Ext: Laboratory Receipt Temp: E Deg C. I 1003-387-5516 Ext: Laboratory Receipt Temp: E Deg C. I 1003-387-5516 Ext: Laboratory Receipt Temp: E Deg C. I 1003-10 Lin, tds, tss, pot-p, toc, Def P. O PON Dot 1003-11 Lin, stds, tss, pot-p, toc, E - I X E - I X 1003-11 Lin, tds, tss, pot-p, toc, E - I X E - I X 1003-11 Lin, tds, tss, pot-p, toc, E - I X E - I X 1003-11 Lin, tds, tss, pot-p, toc, E - I X E - I X 1003-11 Lin, tds, tss, pot-p, toc, E - I X E - I X 1003-11 Lin, tds, tss, pot-p, toc, E - I X E - I X 1003-11	3157 Work Order: 00626 Percyclet Leader: two lock Order Description: Beltzville Reservoir David Wertz Remarks: Tetra Tech (Beltzville Bam) Remarks: 1310 North Corth Corteus Rd., Ste. 600 Remarks: 1311 North Corth Corthous Rd., Ste. 600 Remarks: 1312 North Corth Corthous Rd., Ste. 600 Remarks: 1312 North Corth Corthous Rd., Ste. 600 Remarks: 1312 North Corth Corthous Rd., Ste. 600 Remarks: 100-307-5516 Exc: 1 101-307-5516 Exc: 1 101-307-50 Exc: 1 102-31 Alch Tas, poly. pool 102-31 Alch tas, poly. pool 101-102 Exc: 122-3 102-102 Exc: 122-3 102-102 Exc: 122-3 102-102 Exc: 122-4 102-102 Exc: 122-4 102-102 Exc: 122-4 102-112 Exc: 122-4 102-112<	3157 Work Order: 00626 Eroject Leader: row David Wertz Nemarks: Femarks: Terra Tech (Beltzville Bam) Nemarks: Femarks: Terra Tech (Beltzville Bam) Total Sampling Time (hours): Dog C. I Xilagon X, 2220 Total Sampling Time (hours): Dog C. I 700-387-5516 Ext: Laboratory Receipt Temp: 6 Dog C. I Xilagon M, 2220 Total Sampling Time (hours): Dog C. I 700-387-5516 Ext: Laboratory Receipt Temp: 6 Dog C. I Xilagon M, tds, tss, pod-p, toc, Dog C. I Approved By: Acc. I MM Ext: Laboratory Receipt Temp: 6 Dog C. I Dog C. I MM Ext: Desc: BZ-3 Deep Met MM Desc: BZ-3 Deep Met Desc Desc MM Desc: BZ-3 Deep Met Desc Desc MM Desc BZ-4 Surface Met MM Desc Bartix desc Desc Desc <			Chain of Custody	
Dwidd werts M_{12} (a) M_{12} (c) M_{1	David Werts Remarks: Terra Tech (Belexville Dam) Terra Tech (Belexville Dam) Terra Tech (Belexville Dam) Terra Tech (Belexville Dam) 2330 North Ourse Nd., Ste. 600 Total Sampling Time (hours): 703-387-5516 Ext: 715 Laboratory Receipt Temp: 6 Deg C. I 8 Desc: B2-11X 9 Desc: B2-3 Mid-Dept 103-10 dept proposition Deg C. I 103-10 Approved by C - 11X 103-10 Epse: B2-1 X 103-10 Ep	David Wertz Remarks: Terra Tech (Beltzville Dam) Terra Tech (Beltzville Dam) Terra Tech (Beltzville Dam) Total Sampling Time (hours) ! 2030 Neth National Sid., Ste. 600 Total Sampling Time (hours) ! 70-397-516 Ext: 70-307-516 Method 70-317-516 Ext: 70-317-516 Ext: 70-316 Ext: 70-317 Japortoved By: 70-40-5 Ext: 70-7 Ext: 70-7 Ext: 70-7 Ext: 70-7 Ext: 70-7 Ext: 71 Ext:	Account:		006226 Project Leader: scription: Beltzville Reservoir	
Address: Tetra Treh (Gaelzville Dam) Phones: 703-397-5516 Ext: Phones: 703-397-5516 Ext: Phones: 703-397-5516 Ext: Sample No: 4 Desc: B2-3 Mid-Depth Math Ext: Sample No: 4 Desc: B2-1 Malar: tim, alk, tds, tes, pot-p, tco; A-11X Malar: tim, alk, tds, tes, pot-p, tco; B-11X Malar: tim, alk, tds, tes, pot-p, tco; B-11	Address: Total Sampling The (houre): Phone: 703-367-5516 Ext: Phone: 703-367-5516 Ext: Emplex: MACCONTRADUNE Rd., Sto. Total Sampling The (houre): Emplex: MACCONTRADUNE Rd., Sto. Total Sampling The (houre): Emplex: MACCONTRADUNE Rd., Sto. Total Sampling The (houre): Emplex: MACCONTRADUNE Rd., Sto. Endotratory Receipt Temp: 6 Deg C. I MB1-n, tim, alk, tds, tss, pol-p, too; Sample NO: 5 Desc: BC-3 Deep M13-n, tim, alk, tds, tss, pol-p, too; Sample NO: 5 Desc: BC-3 Deep M13-n, tim, alk, tds, tss, pol-p, too; Sample NO: 5 Desc: BC-4 Surface M13-n, tim, alk, tds, tss, pol-p, too; Sample NO: 6 Desc: BC-4 Surface M13-n, tim, alk, tds, tss, pol-p, too; Sample NO: 6 Desc: BC-4 Surface M13-n, tim, alk, tds, tss, pol-p, too; Sample NO: Sample NO: Sample NO: Desc: BC-4 Surface Mat M13-n, tim, alk, tds, tss, pol-p, too; Sample NO: Sample NO: Sample NO: Desc: BC-4 Surface Mat S-11 X Sample NO: Desc: BC-4 Surface Mat S-11 X	Address: Tetra Fetra Ville Bath Phones: 70-307-51/6 Ext: Dampless: WARD OFF Ext: Dampless: Prove Ext: Dampless: Finite: Ext: Dampless: Date: Ext: Date: Date: Date:			Remarks.	
Bhome: 703-387-5516 Ext: Total Sampling Time (hours): Samplers: MARCIX Laboratory Receipt Temp: 6 Deg C. 1 Sample No: 4 Desc: BL-3 Mid-Depth Mat mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 mi3-n; tim, alk, tds, tss, pot-p, toc, 12 12 12 fs, tcs, 13 14 14 14 14 fs, tcs, 11 12 12 12 12 fs, tcs, 11 12 12 12 12 12 fs, tcs, 11 12 12 12 12 12 12 fs, tds, tss, pot-p, toc, 12 12 12 12 12 12 12 <t< td=""><td>Phone: 703-187-5316 Ext: Total Sampling Time (hours): Sample No: 4 Desc: 2K-3 Mid-Depth Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail A - 1 K K Mid-n, thn, alk, tds, tss, pot-p, toc, Mail A - 1 K K Sample No: 5 Desc: 2K-3 Deep Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail Mail Mail Mail Sample No: 6 Desc: 2K-4 Surface Mail Mail Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail Mail Mail Mail Mail Mail Mail Sample No: 6 Desc: 2K-4 Mail Mail Mail Mail Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail Mail Mail Mail Mail Mail Mail Mai</td><td>Phone:703-377-5516Ret:Total Sampling Time (hours):Sample No:4Desc:B2-3 Mid-DepthMaitJampie No:4Desc:B2-3 Mid-DepthMaitJampie No:4Desc:B2-3 Mid-DepthMaitJampie No:4Desc:B2-3 Mid-DepthMaitJampie No:5Desc:B2-3 Mid-DepthMaitJampie No:5Desc:B2-3 DepthMaitJampie No:5Desc:B2-4 DepthMaitJample No:5Desc:B2-4 DepthMaitJample No:5Desc:B2-4 DepthMaitJample No:6Desc:B2-4 DutaceMaitJample No:6Desc:B2-4 DutaceJaceJace:JaceJaceJace</td><td>Address:</td><td>Ste.</td><td>600</td><td></td></t<>	Phone: 703-187-5316 Ext: Total Sampling Time (hours): Sample No: 4 Desc: 2K-3 Mid-Depth Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail A - 1 K K Mid-n, thn, alk, tds, tss, pot-p, toc, Mail A - 1 K K Sample No: 5 Desc: 2K-3 Deep Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail Mail Mail Mail Sample No: 6 Desc: 2K-4 Surface Mail Mail Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail Mail Mail Mail Mail Mail Mail Sample No: 6 Desc: 2K-4 Mail Mail Mail Mail Mail Mid-n, thn, alk, tds, tss, pot-p, toc, Mail Mail Mail Mail Mail Mail Mail Mai	Phone:703-377-5516Ret:Total Sampling Time (hours):Sample No:4Desc:B2-3 Mid-DepthMaitJampie No:4Desc:B2-3 Mid-DepthMaitJampie No:4Desc:B2-3 Mid-DepthMaitJampie No:4Desc:B2-3 Mid-DepthMaitJampie No:5Desc:B2-3 Mid-DepthMaitJampie No:5Desc:B2-3 DepthMaitJampie No:5Desc:B2-4 DepthMaitJample No:5Desc:B2-4 DepthMaitJample No:5Desc:B2-4 DepthMaitJample No:6Desc:B2-4 DutaceMaitJample No:6Desc:B2-4 DutaceJaceJace:JaceJaceJace	Address:	Ste.	600	
Sample No: 4. Laboratory Receipt Temp: 6. 0. Sample No: 4 Desc: B2-3 Mid-Depth Mat mi3-n, thn, alk, tds, tss, pot-p, too, model Dody Dody Mat Mat mo2-u, mo3-n, d-pot pot Dody Dody Dody Mat Mat mo3-u, thn, alk, tds, tss, pot-p body Dody Dody Dody Mat Mat mo3-u, mo3-n, thn, alk, tds, tss, pot-p body Dody Dody Dody Mat Mat mi3-n, thn, alk, tds, tss, pot-p body Dody Dody Dody Mat Mat <td>Samplers: W.A.G.K. Laboratory Receipt Temp: 6 Deg C. I Sample No: 4 Desc: E2-3 Mid-Depth Mat mi3-n, tin, alk, tds, tss, pot-p, too, mi2-n, mi2-n, d-pot p, o-pot, body Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat fs, teo Mat mat Mat Mat Mat fs, teo Mat Mat Mat Mat Mat fs, teo Mat Mat Mat Mat Mat Mat <tr< td=""><td>Samplers: Math City Laboratory Receipt Temp: 6 Deg C. 1 Sample No: 4 Desc: EZ-3 Mid-Depth Math Math Math Math Math Math Math Math</td><td>- enold</td><td></td><td>Total Sampling Time (hours):</td><td></td></tr<></td>	Samplers: W.A.G.K. Laboratory Receipt Temp: 6 Deg C. I Sample No: 4 Desc: E2-3 Mid-Depth Mat mi3-n, tin, alk, tds, tss, pot-p, too, mi2-n, mi2-n, d-pot p, o-pot, body Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, model Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat mi3-n, tin, alk, tds, tss, pot-p, too, mat Mat Mat Mat fs, teo Mat mat Mat Mat Mat fs, teo Mat Mat Mat Mat Mat fs, teo Mat Mat Mat Mat Mat Mat <tr< td=""><td>Samplers: Math City Laboratory Receipt Temp: 6 Deg C. 1 Sample No: 4 Desc: EZ-3 Mid-Depth Math Math Math Math Math Math Math Math</td><td>- enold</td><td></td><td>Total Sampling Time (hours):</td><td></td></tr<>	Samplers: Math City Laboratory Receipt Temp: 6 Deg C. 1 Sample No: 4 Desc: EZ-3 Mid-Depth Math Math Math Math Math Math Math Math	- enold		Total Sampling Time (hours):	
<pre>Sample No: 4 Desc: E2-3 Mid-Depth Matinization in the disk tas, polep, toc, mi3-n, thn, alk, tds, tss, polep, toc, m3-n, mog-n, d-polep, p-pole, body main-n, thn, alk, tds, tss, polep, toc, mi3-n, thn, tds, tss, polep, toc, mi3-n, thn, alk, tds, tss, polep, toc, mi3-n, tss, polep, toc, mi3-n, tss, polep, toc, mi3-n, tss, tss, polep, toc, mi3-n, tss, polep, tss, tss, tss, tss, tss, tss, tss, ts</pre>	<pre>Amile No: 4 Desc: BZ-3 Mid-Depth Mil mil-n, thn, alk, tds, tes, poi-p, too; md2-n, mg3-n, d-poi-p, orpoi, body mil-n, thn, alk, tds, tes, poi-p, too; mil-n, ten, alk, tds, tes, poi-p, tes, poi-p, tes, tes, poi-p, tes, tes, tes, tes, tes, tes, tes, tes</pre>	<pre>Gample No: 4 Desc: BZ-3 Mid-Depth Mat mi3-n, thn, alk, tds, tes, pot-p, too, no2-n, no3-n, d-pot-p, too, mi3-n, thn, alk, tds, tes, pot-p, too, mi3-n, ten, alk, tes, tes</pre>	Samplers:	Cik	d By: Kw	uo
mh3-n, than, alk, tds, tss, pot-p, toc, mo2-n, mo5-n, d-pot-p, 0-pot, bod, Sample No: 5 Desc: BZ-3 Deep mh3-n, than, alk, tds, tss, pot-p, toc, mb3-n, than, than, than, than, tss, tss, pot-p, toc, mb3-n, than, tss, tss, tss, tss, tss, tss, tss, ts	m3-n, thn, alk, tds, tss, pot-p, too, m2-n, moj-n, d-pot-p, copot, body Sample No: 5 Desc: Bz-3 Deep m3-n, thn, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, m3-n, moj-n, d-pot p, copot, bod fo: tc, m, alk, tds, tss, pot-p, too, fo: tc, m, alk, tds, tss, pot-p, tss	m3-n, tin, alk, tds, tss, pot-p, too, m3-n, m3-n, d-pot-p, o pot, body m3-n, m3-n, d-pot-p, o pot, body m3-n, tin, alk, tds, tss, pot-p, too; m3-n, tin, tin, tss, tss, tss, tss, tss, tss, tss, ts		d-Depth	marrier (marrier) (ma	Date:
<pre>mo2-n, mo3-n, d-po4-pt, p-po4, bod. Sample No: 5 Desc: BZ-3 Deep mh3-n, thn, alk, tds, tss, po4-p, toc, mo2-n, mg1n, d-po4 p, e-po4, bod. ac2-n, mg1n, d-po4 p, e-po4, bod. mb3-n, thn, alk, tds, tss, po4-p, toc, mb3-n, d-po4 p, o-po4, bod. mb3-n, mb4, tss, po4-p, toc, mb3-n, d-po4 p, o-po4, bod. fc, tc, mb3-n, d-po4 p, o-po4, bod. mb2-n, mo3-n, d-po4 p, o-po4, bod. mb3-n, tdn, tss, po4-p, toc, mb3-n, d-po4 p, o-po4, bod. mb3-n, tdn, tss, po4-p, toc, mb3-n, d-po4 p, o-po4, bod. mb3-n, tdn, tss, po4-p, toc, mb3-n, d-po4 p, o-po4, bod. mb3-n, d-po4 p, o-po4, bod. mb3-n, tdn, tss, po4-p, toc, mb3-n, d-po4 p, o-po4, bod. mb3-n, d-po4 p, toc, mb3-n, d-po4-n, d-po4 p, toc, mb3-n, d-po4 p, toc, mb3-n, d-po4-n, d-po4 p, toc, mb3-n, d-po4-n, d-po4 p, toc, mb3-n, d-po4-n</pre>	<pre>mc2-n, mc3-n, d-pod-py, 0-pod, bod, sample No: 5</pre>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		alk, tds,	- 1 X	1/ H2SO4 (pH<2) ;
mo2-n, mo3-n, d-poi, body body b-1 X b-1 X Sample No: 5 Desc: BZ-3 Deep hat hat hat inh3-n, tdn, alk, tds, tss, poi-p, toc, b-1 X b-1 X no2-n, mo3 n, d-poi p, e-poi, body b-1 X b-1 X for 1 b-1 X b-1 X b-1 X no2-n, mo3 n, d-poi p, e-poi, body b-1 X b-1 X no2-n, mo3 n, d-poi p, e-poi, body b-1 X b-1 X no2-n, mo3 n, d-poi p, e-poi, body b-1 X b-1 X no2-n, mo3 n, d-poi, poi b-1 X b-1 X no2-n, mo3 n, d-poi, b-gody b-1 X b-1 X fc, tc, hat b-1 X	mo2-n, mo3-n, d-pot, body mo2-n, mo3-n, d-pot, body mo1 mo1 Sample No: 5 Desc: B2-3 Deep mo1 ini3-n, tdn, alk, tds, tss, pot-p, toc, mo1 mo1 mo2-n, mo1, d-pot p, e-pot, body mo1 mo1 mo2-n, mo3-n, d-pot p, e-pot, body mo1 mo1 fc, tc, mo2-n, mo3-n, d-pot, e-pot, body mo1 fc, tc, mo2-n, mo3-n, d-pot, e-pot, e-pot, body mo1 fc, tc, mo2-n, mo3-n, d-pot, e-pot, e-po	mo2-n, mo3-n, d-pod-p, o-pod, bodd met met met Sample No: 5 Desc: Bz-3 Deep met met mi3-n, tim, alk, tds, tas, pod-p, toc, mod met met mi3-n, tim, alk, tds, tas, pod-p, toc, met met met mi3-n, tim, alk, tds, tas, pod-p, toc, met met met mi3-n, tim, alk, tds, tas, pod-p, toc, met met met fc, tc. mi3-n, tim, alk, tds, tas, pod-p, toc, met met fc, tc. mi3-n, tim, alk, tds, tas, pod-p, toc, met met met fc, tc. mi3-n, tim, alk, tds, tas, pod-p, toc, met met met fc, tc. mi3-n, tim, alk, tds, tas, pod-p, toc, met met met fc, tc. mi3-n, tim, alk, tds, tas, pod-p, toc, met met met met fc, tc. mi3-n, tim, alk, tds, tas, pod-p, toc, met			- 1 - 1 - 1	w/ Cool to 6 C; u g w/ H3PO4/zero head
<pre>Sample No: 5 Desc: B2-3 Deep nh3-n, thn, alk, tds, tss, poi-p, toc, nd: nd: d poi-p, o-poi, bod, maple No: 6 Desc: B2-4 Surface nh3-n, thn, alk, tds, tss, poi-p, toc, motor, no3-n, d poi p, o-poi, bod fo, tc, th, mod-n, poi, bod fo, tc, th, mod-n, d poi p, o-poi, bod fo, tc, td, tds, tss, poi, bod fo, tc, ts, td, tds, tss, poi, bod fo, tc, th, mod-n, d poi, bod fo, tc, td, tds, tss, poi, bod fo, tc, td, tds, tss, poi, bod fo, tc, td, tds, tss, poi, bod for td, td, tds, tss, poi, td, td, td, td, td, td, td, td, td, td</pre>	<pre>Sample No: 5 Desc: BZ-3 Deep mh3-n, tdn, alk, tds, tss, po4-p, toc, mo2-n, mga n, d po4 p, e-po4, hod, no2-n, mga n, d po4 p, e-po4, hod, Sample No: 6 Desc: BZ-4 Surface mh3-n, tdn, tss, po4-p, toc, mo2-n, mo3-n, d po4 p, e-po4, bod fo, tc, mo3-n, d po4 p, e-po4, bod for interest for intere</pre>	Find the set of the	по2-п,	d-pod-p	- 1 X	Cool to 6 C;
Gample No: 5 Desc: B2-3 Deep Mat mi3-n, tkn, alk, tds, tss, po4-p, toc, A = 1 × Z n02-n, n03-n, d po4-p, o-po4, bod, B = 1 × Z sample No: 6 Desc: B2-4 Surface Mat mi3-n, tkn, alk, tds, tss, po4-p, toc, B = 1 × Z sample No: 6 Desc: B2-4 Surface Mat mi3-n, tkn, alk, tds, tss, po4-p, toc, B = 1 × Z fs, tc, Mat A = 1 × Z fs, tc, Mat B = 1 × Z <td< td=""><td>Gample No: 5 Desc: 32-3 Deep Mat nh3-n; tim, alk, tds, tss, po4-p, toc, A = 1 × n02-ni, mo3-n, d poi P, e-poi, bod, B = 1 × n13-n; tim, alk, tds, tss, po4-p, toc, B = 1 × sample No: 6 Desc: B2-4 Surface Mat nh3-n, tim, alk, tds, tss, po4-p, toc, B = 1 × sample No: 6 Desc: B2-4 Surface Mat nh3-n, tim, alk, tds, tss, po4-p, toc, B = 1 × fs, tc, Mat B = 1 × no2-n, mo3-n, d poi, p opi, bed B = 1 × fs, tc, Mat B = 1 × fs, tc, M = 1 × B = 1 × fs, tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 ×</td><td>Gample No: 5 Desc: BZ-3 Deep Mat nh3-n, tdn, alk, tds, tss, po4-p, toc, A = 1 × no2-n, no3-n, d po4 p, o po4, bod, B = 1 × sample No: 6 Desc: BZ-4 Surface Mat nh3-n, tdn, alk, tds, tss, po4-p, toc, B = 1 × mb2-n, no3-n, d-po4 p, o-po4, bod, B = 1 × fe, tc, Mat fe, tc, Mat fe, tc, Mat fe, tc, Mat net: Mat net:</td><td></td><td>211</td><td>4</td><td></td></td<>	Gample No: 5 Desc: 32-3 Deep Mat nh3-n; tim, alk, tds, tss, po4-p, toc, A = 1 × n02-ni, mo3-n, d poi P, e-poi, bod, B = 1 × n13-n; tim, alk, tds, tss, po4-p, toc, B = 1 × sample No: 6 Desc: B2-4 Surface Mat nh3-n, tim, alk, tds, tss, po4-p, toc, B = 1 × sample No: 6 Desc: B2-4 Surface Mat nh3-n, tim, alk, tds, tss, po4-p, toc, B = 1 × fs, tc, Mat B = 1 × no2-n, mo3-n, d poi, p opi, bed B = 1 × fs, tc, Mat B = 1 × fs, tc, M = 1 × B = 1 × fs, tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 × fs: tc, M = 1 × B = 1 ×	Gample No: 5 Desc: BZ-3 Deep Mat nh3-n, tdn, alk, tds, tss, po4-p, toc, A = 1 × no2-n, no3-n, d po4 p, o po4, bod, B = 1 × sample No: 6 Desc: BZ-4 Surface Mat nh3-n, tdn, alk, tds, tss, po4-p, toc, B = 1 × mb2-n, no3-n, d-po4 p, o-po4, bod, B = 1 × fe, tc, Mat fe, tc, Mat fe, tc, Mat fe, tc, Mat net:		211	4	
mlj-n, tkn, alk, tds, tss, po4-p, toc, ac2.n, moj n, d-po4-p, o-po4, bod Sample No: 6 Desc: BZ-4 Surface mlj-n, tkn, alk, tds, tss, po4-p, toc, mlj-n, tkn, alk, tds, tss, po4-p, toc, fc, tc., moj n, d-po4, bod fc, tc., m	mll-n, thn, alk, tds, tss, po4-p, toc, mll-n, mll, tds, tss, po4-p, toc, Sample No: 6 Desc: B2-4 Surface mll-n, thn, alk, tds, tss, po4-p, toc, mll-n, thn, alk, tds, tss, po4-p, toc, mll-n, mll + do4 p, 0-po4, bod fo, tc, mll	mh3-n, thn, alk, tds, tss, po4-p, toc, mo2-n, no3-n, d-po4-p, co-po4, bod, Sample No: 6 Desc: B2-4 Surface mh3-n, thn, alk, tds, tss, po4-p, toc, mo2-n, d-po4-p, toc, mb2-n, mo3-n, d-po4-p, toc, fe, tc, mb2-n, d-po4-p, toc, fe, tc, mb3-n,	- Sample No:	Desc:		1
pol-n, noj-n, d-pol-p, o-pol, bod, de la	<pre>ma2.n. mgi n; d'poi p; o poi, bod mailen, ida, itss, poi, bod mi3.n. ida, itss, poi, bod mi3.n. ida, itss, poi, bod fe, te. mo3.n. d-poi, bod f</pre>	no2-n. moj-n. d pot p. e-pot. bod. B - 1 × Sample No: 6 Desc: B2-4 Surface Mat mi3-n. tim. alk. tda. tss. po4-p. toc. Mat mi3-n. tim. alk. tda. tss. po4-p. toc. Mat fs. tc. Mat mo2-n. moj-n. d.po4-p. o-po4. bod Mat fs. tc. Mat mole-n. moj-n. d.po4-p. o-po4. bod Mat fs. tc. Mat mole-n. moj-n. d.po4-p. o-po4. bod Mat fs. tc. Mat mole-n. moj-n. d.po4-p. o-po4. bod Mat fs. tc. Mat mole-n. moj-n. d.po4-p. o-po4. bod Mat fs. tc. Mat		tkn, alk, tds,	- 1 X	1/ H2SO4 (pH<2) ; 0
mo2-n, mo3-n, d pod, p, o pod, bod, Sample No: 6 Desc: B2-4 Surface mb3-n, tim, alk, tds, tss, pod-p, toc, mo2-n, no3-n, d pod p, o pod, bod fc, tc, mo3-n, d pod p, resci ved by most fc, tc, mo3-n, d pod p, resci ved by most fc, tc, mo3-n, d pod p, o pod, bod fc, tc, mo3-n, d pod p, resci ved by most fc, tc, mo3-n, d pod p, resci ved for labora pate: 23, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12	pol-1 x pol-1 y o pol p o pol bod ample No: 6 Desc: B2-4 Surface ml3-n, thn, alk, tds, tss, pol-p, toc, ml2-n, no3-n, d-pol p, o pol, bod fc, tc, n,	po2-n, noj-n, d-poi p, o-poi, bod, Sample No: 6 Desc: BZ-4 Surface mj3-n, tkn, alk, tds, tss, poi p, toc, mj3-n, d-poi p, o-poi, bod fo, tcn, no3-n, d-poi, bod fo, tcn, no3-n, d-poi, p, o-poi, bod fo, tcn, no3-n, d-poi, p, o-poi, bod fo, tcn, no3-n, d-poi, bod fo, t			× × 	w/ Cool to 6 C;
Sample No: 6 Desc: B2-4 Surface mi3-n, tin, alk, tds, tss, po4-p, toc, mi3-n, i a po4 p, o-po4, beg f_{0} , tc, f_{0} , tc, f_{0} , tc, f_{0} , tc, f_{0} , tc, f_{0} , tc, f_{0} , tc, f_{1} , f_{2} , f_{2} , f_{1} , f_{2} , $f_{$	Relinquished by: $B = 1 \times P + m = 0$ $m = 1 \times 20$ $m = 1 \times 10^{-1}$ $m = 1 \times 10^{-1$	And And B = 1 X Ft mo3mo2 p w/l Sample No: 6 Desc: B2.4 Surface Matrix: 0 mh3-n, thn, alk, tds, tss, po4-p, too, A = 1 X Ft mb3 p w/l m28 mb2-n, mo3-n, d-po4-p, too, A = 1 X Ft mb3 p w/l m28 mb2-n, mo3-n, d-po4-p, too, A = 1 X Ft mb3 p w/l m28 mb2-n, mo3-n, d-po4-p, too, A = 1 X Ft mb3 p w/l m28 mb2-n, mo3-n, d-po4-p, o-po4, body A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fe, tc. A = 1 X 25 mmberva g w/l cool fer tab. A = 1 X 25 mmberva g w/l cool fer tab. A = 1 X 25 mmberva g w/l cool fer tab. A = 1 X 25 mmberva g w/l cool bate: A = 1 X 25 mmberva g w/l cool fer tab. A = 1 X 25 mmberva g w/l cool fer tab. A = 1 X 25 mmberva g w/l cool fer tab. A = 1 X 25 mmberva g w/l cool <	no2-n,	d-po4-p	K F F	Cool to 6 C;
Sample No: 6 Desc: B2-4 Surface Matrix: 0 mi3-n, thn, alk, tds, tss, po4-p, toc, m02-n, mo3-n, d-po4-p, o-po4, bed fc, tc, mo3-n, d-po4-p, o-po4-p, o-po4-p, o-po4-p, o-po4-p, o-lope fc, tc, mo3-n, d-po4-p, o-po4-p, o-po4-p, o-po4-p, o-lope fc, tc, mo3-n, d-po4-p, o-po4-p, o-po4-p, o-po4-p, o-po4-p, o-po4-p, o-lope fc, tc, mo3-n, d-po4-p, o-po4-p, o-po4-p, o-po4-p, o-po4-p, o-lope fc, tc, mo3-n, d-po4-p, o-po4-p, o-p	Sample No: 6 Desc: B2-4 Surface Matrix: 0 mi3-n. thn. alk. tds. tss. po4-p. toc. mi2-n. no3-n. d-po4 p. o.po4. bod f. tc. no3-n. d-po4. bod f. tc. no3-n	Sample No: 6 Desc: B2-4 Surface Matrix: 0 mb3-n, thn, alk, tds, tss, po4-p, toc, mb3-n, th, alk, tds, tss, po4-p, toc, mo2-n, mo3-n, d-po4-p, opp4, bod f, tc, mb, mb, mb, mb, mb, mb, mb, mb, mb, mb		4	- 1 X Pt no3no2	w/ Cool
nh3-n, tin, alk, tds, tss, po4-p, toc, nh3-n, tin, alk, tds, tss, po4-p, toc, no2-n, no3-n, d-po4-p, o-po4, bod fc, tc, hol p, Hol b fc, tc, hol p, Hol b Relinquished ny: $Hol p = 1 \times 1 \times 250$ militoro p w/ Relinquished ny: $Hol p = 1 \times 250$ militoro p w/ Received for laboratory by: $Hol p = 1 \times 250$ militoro p w/ Received for laboratory by: $Hol p = 1 \times 250$ militoro p w/ Received for laboratory by: $Hol p = 1 \times 250$ militoro p w/ pate: $B = 1 \times 250$ militoro p w/ Received for laboratory by: $Hol p = 1 \times 250$ militoro p w/ Received for laboratory by: $Hol p = 1 \times 250$ militoro p w/ Received for laboratory by: $Hol p = 1 \times 1215$ Date: $B = 1 \times 12155$ Date: $B = 1 \times $	nh3-n, thm, alk, tds, tss, po4-p, toc, $a \cdot 1 \times 2^{a}$ this p w/ H3 $a \cdot 1 \times 2^{a}$ and $b \times 0^{c}$ $a \cdot 1 \times 1^{a}$ and $b \times 0^{c}$ $b = 1 \times 1^{a}$ and $b \times 0^{c}$ and $b \to 0^{c}$ and $b \to 0^{c}$ and $b \to 0^{c}$ and $b \to 0^{c}$ a	mil-n, thn, alk, tds, tss, po4-p, toc, mil-n, thn, alk, tds, tss, po4-p, toc, mole-n, mole-n, depot prodet bod fo, tc, fo, tc, fo, fo, fo, fo, fo, fo, fo, fo		Desc:		Date: 81
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rxw 08/07/15 Account: Customer: Address: Phone: Samplers: ========	8:01:10 AM 3157 David Wertz Tetra Tech (Bel 1320 North Cour Arlington VA 22 703-387-5516 WACiN	rder: rder De Ste. 60	No: Bottle I mp Unacceptable,	B B
SG(SY) sample No: nh3-n, t no2-n, r fc, tc, nh3-n, t nh3-n, t fc, tc, SG/SG sample No: nh3-n, t nh3-n, t nh3-n, t	tkn, alk, tds, tkn, alk, tds, 103-n, d-po4-p, tkn, alk, tds, 103-n, d-po4-p, tkn, alk, tds, 103-n, d-po4-p, tkn, alk, tds,	Desc: BZ-5 Surface k, tds, tss, po4-p, toc, d-po4-p, o-po4, bod d-po4-p, o-po4, bod k, tds, tss, po4-p, toc, d-po4-p, o-po4, bod besc: BZ-6 Mid-Depth k, tds, tss, po4-p, toc, d-po4-p, o-po4, bod,	Matrix: o Date: 0.0000 A = 1 X Pt mh3 p w/ H2SO4 (pH<2); B = 1 X 802 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; F = 1 X Pt n03n02 p w/ Cool to 6 C; F = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n13 p w/ H2SO4 (pH<2); Matrix: o Date: $\sqrt{31/6}$ A = 1 X Pt n13 p w/ H2SO4 (pH<2); B = 1 X 802 Alk p w/ Cool to 6 C; F = 1 X Pt n03n02 p w/ Cool to 6 C; F = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n03n02 p w/ Cool to 6 C; B = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n03n02 p w/ Cool to 6 C; B = 1 X Pt n03n02 p w/ Cool to 6 C; A = 1 X Pt n03n02 p w/ Cool to 6 C; B = 1 X Pt n03n02 p w/ Cool to 6 C; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; A = 1 X Pt n03n02 p w/ Cool to 6 C; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X Pt n03n02 p w/ Cool to 6 C; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X Pt n03n02 p w/ Cool to 6 C; C = 1 X 2xambervoa g w/ H3PO4/zero headspace; C = 1 X Pt n03n02 p w/ Cool to 6 C; C = 1 X Pt n03n02 p w/ Cool t	Date: 0.0×0.0 4 (pr<2); 1 to 6 C; 1304/zero headspace; to 6 C; 2001 to 6 C; 2001 to 6 C; 21001 to 6 C; 1 to 6 C; 1 to 6 C; 1 to 6 C; 1 to 6 C; 2001 to 6 C; 2001 to 6 C; 2001 to 6 C; 2001 to 6 C; 21000000000000000000000000000000000000
Relinquished by: Date: S/31	Ja J	Time: 1215	Multi Received for laboratory by: Multi Received for laboratory by: Multi Time: 1345 Date: 8/3///5 Time: 1345 Sample entered by:	d by:

	rxw 08/07/15	8:01:10 AM		M. J. REIDER ASSOCIATES, INC.	COFC.PRT Page: 4
				Chain of Custody	
	Account:	3157	Work Order: 006226 Work Order Description	006226 Project Leader: rxw scription: Beltzville Reservoir	262656
	Customer:	David Wertz		Bemarker * Out and hard an a recent of	
	Address:	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste.	zville Dam) house Rd., Ste. 600		
	Ĩ	TOZZZ WA HOJGHITTR	TO	Total Sampling Time (hours):Bottle Pr	Prep by:
	samplers:	WACIN		Laboratory Receipt Temp: 6 Deg C. If Temp Unacceptable, On Ice?(Approved By: Ascord	M A
36 187	36 (87) sample No:	: 10 Desc:	sample No: 10 Desc: BZ-6 Deep	Date: A	Date: Starlis
	nh3-n	tkn,	alk, tds, tss, po4-p, toc,	A - 1 X Pt nh3 p w/ H2SO4 (pF B - 1 X 89z Alk p w/ Cool to C - 1 X/Xxambervoa g w/ H3P); C; Zero headspace:
	no2-n, no3-	, no3-n, d-po4-p, o-po4, bod	o-po4, bod	XX	to 6 C;
36188	Sample No:	11 Desc:	BZ-7 Surface	Matrix: o Da	Date: 8/31/15
	nh3-n,	tkn,	alk, tds, tss, po4-p, toc,	- 1 X - 1 X	(); C,
	по2-п, по3	Si-	d-po4-p, o-po4, bod		zero headspace; ; 6 C;
00000		bler		- 1 X 250mlMicro p w/	a25203;
26127	Sample No:	12	Desc: BZ-7 Mid-Depth	Matrix: 0	50
	nh3-n,	A CO.	alk, tds, tss, po4-p, toc,	××); C;
	no2-n	, no3-n,	d-po4-p, o-po4, bod,	- 1 X 2xambervoa g w/ H3PC - 1 X L bod p w/ Cool to 6	zero headspace;
		F	0	н т	6 C;
			000	1	
	Relinquished by:	hed by: Why	Received by:	When the Received for laboratory by: And	14
	Date: 8/31	his /	Time: 1715	Date: 8/3/15 Time: 1345	1
				Sample entered by:	d by: rv2

	WW NT:TN:0			Page: 5
			Chain of Custody	
	3157	Work Order: 006226 Work Order Description	Work Order: 006226 Work Order Description: Beltzville Reservoir	No: 262656
Customer: D	DAVID WELLZ		Remarks:	
Address: T 1 A	Tetra Tech (Beltzv 1320 North Courtho Arlington VA 22201	Tetra Tech (Beltzville Dam) 1320 North Courthouse Rd., Ste. 600 Arlington VA 22201		
Phone: 7 Samplers:	703-387-5516 WACIK	Bxt:	Total Sampling Time (hours): Total Sampling Temp: Deg C. If Temp Approved By:	Temp Unacceptable, On Ice?
Sample No: 13 nh3-n, tkn, no2-n, no3-1		besc: BZ-7 Deep alk, tds, tss, po4-p, toc, d -po4-p, o-po4, bod	M M M M M M M M M M M M M M M M M M M	rix: o Date: $\Re[31]$ $\Re[31]$ $\Re[31]$ $\Re[31]$ $\Re[31]$ $\Re[32]$ $\Re[32]$ $\Re[32]$ $\Re[32]$ $\Re[32]$ $\Re[32]$ $\Im[32]$
Relinquished by:. Date: 8/31/15	Jan	Time: 1215	Multi Received for laboratory by: Date: <u>2/3465</u> Th	by: prime 1395 Time: 1395