2019 WATER QUALITY MONITORING PROMPTON RESERVOIR PROMPTON, PENNSYLVANIA



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

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Prompton Reservoir Prompton, Pennsylvania

<u>SEC</u>	TION	<u>I</u>	PAGE NO.
1.0	INT	RODUCTION	1-1
	1.1	PURPOSE OF THE MONITORING PROGRAM	1-1
	1.2	DESCRIPTION OF PROMPTON RESERVOIR	1-1
	1.3	ELEMENTS OF THE STUDY	1-1
2.0	ME'	2-1	
	2.1	PHYSICAL STRATIFICATION MONITORING	2-1
	2.2	WATER COLUMN CHEMISTRY MONITORING	2-1
	2.3	TROPHIC STATE DETERMINATION	2-5
	2.4	RESERVOIR BACTERIA MONITORING	2-5
3.0	RES	SULTS AND DISCUSSION	3-1
	3.1	STRATIFICATION MONITORING	3-1
		3.1.1 Temperature	3-1
		3.1.2 Dissolved Oxygen	3-4
		3.1.3 рН	3-7
	3.2	WATER COLUMN CHEMISTRY MONITORING	3-10
		3.2.1 Ammonia	3-10
		3.2.2 Nitrite and Nitrate	3-15

Prompton Reservoir Prompton, Pennsylvania

<u>SEC</u>	TION		PAGE NO.
		3.2.3 Total Kjeldahl Nitrogen	3-15
		3.2.4 Total Phosphorus	3-15
		3.2.5 Dissolved Phosphorus	3-16
		3.2.6 Total Dissolved Solids	3-16
		3.2.7 Total Suspended Solids	3-16
		3.2.8 Biochemical Oxygen Demand	3-16
		3.2.9 Alkalinity	3-17
		3.2.10 Total Organic Carbon	3-17
		3.2.11 Chlorophyll a	3-18
	3.3	TROPHIC STATE DETERMINATION	3-18
	3.4	RESERVOIR BACTERIA MONITORING	3-19
4.0	REF	ERENCES	
APP	ENDL	X A STRATIFICATION DATA TABLES	
A DD	FNDI	K R I ARORATORY REPORTING SHEETS	

Prompton Reservoir Prompton, Pennsylvania

<u>SEC</u>	<u>PAG</u>	E NO.
	<u>LIST OF TABLES</u>	
2-1	Prompton Reservoir water quality schedule for 2019 monitoring	.2-2
2-2	Water quality test methods, detection limits, state regulatory criteria, and sample holding times for water quality parameters monitored at Prompton Reservoir 2019.	. 2-4
2-3	Water quality test methods, detection limits, PADEP water quality standards, and sample holding times for bacteria parameters monitored at Prompton Reservoir in 2019.	. 2-5
3-1	EPA Ammonium Freshwater Criteria (2013) Specific ammonia criteria dependen temperature and pH.	
3-2	Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2019.	3-11
3-3	EPA trophic classification criteria and average monthly measures for Prompton Reservoir in 2019.	.3-19
3-4	Bacteria counts (colonies/100ml) at Prompton Reservoir surface stations during 2019	. 3-21

Prompton Reservoir Prompton, Pennsylvania

<u>SEC</u>	<u>PAGE NO</u>
	<u>LIST OF FIGURES</u>
2-1	Location map for Prompton Reservoir and water quality monitoring stations in 2019
3-1	Temperatures measured in surface waters of Prompton Reservoir during 2019 3-2
3-2	Stratification of temperature measured in the water column of Prompton Reservoir at station PR-3 during 2019
3-3	Dissolved oxygen measured in surface waters of Prompton Reservoir during 2019
3-4	Dissolved oxygen measured in the water column of Prompton Reservoir at station PR-3 during 2019
3-5	Measures of pH in surface waters of Prompton Reservoir during 2019 3-8
3-6	Stratification of pH measured in the water column of Prompton Reservoir at station PR-3 during 2019
3-7	Carlson Trophic state indices calculated from secchi disk depth, concentrations of chlorophyll a and Total Phosphorus measured in surface waters of Prompton Reservoir at station PR-3 during 2019

1.0 INTRODUCTION

1.1 PURPOSE OF THE MONITORING PROGRAM

The U.S. Army Corps of Engineers (USACE) manages Prompton Reservoir located in northeastern Pennsylvania within the Delaware River Basin. Prompton Reservoir provides flood control to downstream communities on the Lackawaxen River. Additionally, the reservoir provides important habitat for fish, waterfowl, and other wildlife, and recreational opportunities through fishing and boating. Because of the broad range of uses and demands that Prompton 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 monthly water quality monitoring at Prompton Reservoir for June to September 2019.

1.2 DESCRIPTION OF PROMPTON RESERVOIR

Prompton Reservoir was designed to provide flood control to downstream communities along the Lackawaxen River. A second authorized project purpose is recreation. The reservoir is located about 3 miles northwest of Honesdale, Pennsylvania, and dams a drainage area of 59.7 square miles. The primary surface water input to Prompton Reservoir originates from the West Branch of the Lackawaxen River. The reservoir is approximately 3 miles long and is about 30 feet deep at the face of the dam near the township of Prompton, Pennsylvania.

1.3 ELEMENTS OF THE STUDY

The USACE, Philadelphia District, has been monitoring water quality of Prompton Reservoir since 1975. Over this time, the yearly monitoring designs have evolved to address new concerns such as health of public drinking water and contamination of sediments. The 2019 monitoring program follows that in most recent years and includes the following major elements:

- Monthly water quality monitoring of reservoir and tributaries to evaluate compliance with Pennsylvania state water quality standards and potential public health concerns; and
- Monthly profile samples for temperature, dissolved oxygen, chlorophyll, pH, turbidity, and conductivity at all stations in the reservoir and watershed.

2.0 METHODS

2.1 PHYSICAL STRATIFICATION MONITORING

Physical stratification monitoring of the water column at Prompton Reservoir was conducted five times between 26 June and 11 September 2019 (Table 2-1). Physical stratification parameters included temperature, dissolved oxygen (DO), pH, turbidity, and conductivity. Monitoring was conducted at four fixed stations located throughout the Prompton Reservoir watershed (Fig. 2-1). Surface water quality was monitored upstream of the lake at station PR-1S and downstream of the dam at station PR-4S (Fig. 2-1). Stations within the reservoir, PR-2 and PR-3, were monitored at 5-foot intervals from the surface to the bottom. All water quality parameters were measured with a calibrated YSI 6600 V2-4 water quality meter.

The results of stratification monitoring were compared to water quality standards authorized by the Pennsylvania Department of Environmental Protection (PADEP: Chapter 93 Water Quality Standards, 2000), where applicable. The water quality standard for DO is a minimum concentration of 5 mg/L and that for pH is an acceptable range from 6 to 9. All of the water quality data collected during physical stratification monitoring is summarized in Appendix A.

2.2 WATER COLUMN CHEMISTRY MONITORING

Water column chemistry monitoring of the water column at Prompton Reservoir was conducted five times between 26 June and 11 September 2019 (Table 2-1). Water samples were collected at four fixed stations within the reservoir watershed (Fig. 2-1). Surface water samples were collected at stations upstream (PR-1S) and downstream (PR-4S) of the reservoir. Surface, middle, and bottom water samples were collected at main reservoir body stations (PR-2 and PR-3). Surface water samples were collected by opening the sample containers approximately 1 foot below the water's surface. Middle and bottom water samples were collected with a Van Dorn design horizontal water sampler.

Water samples from all depths were analyzed for ammonia (NH3), nitrite (NO2), nitrate (NO3), total kjeldahl nitrogen (TKN), soluble dissolved phosphorus (DP), total phosphorus (TP), total dissolved solids (TDS), total suspended solids (TSS), biochemical oxygen demand (BOD), alkalinity (ALK) and total organic carbon (TOC). Table 2-2 summarizes the water quality parameters, laboratory methods and reporting detection limits, state water quality standards, and allowable maximum hold times for each during the 2019 monitoring period. Laboratory reporting and custody sheets are provided in Appendix B.

Table 2-1. Prompton Reservoir water quality monitoring schedule for 2019											
Date of Sample Collection	Physical Stratification Monitoring (All Stations)	Water Column Chemistry Monitoring (All Stations)	Trophic State Determination (PR-3)	Coliform Bacteria Monitoring (All Surface Stations)							
26 June	X	X	X	X							
17 July	X	X	X	X							
31 July	Х	X	X	X							
22 August	Х	X	Х	Х							
11 September	Х	X	X	X							



Figure 2-1.

Table 2-2. Water quality test methods, detection limits, state regulatory criteria, and sample holding times for water quality parameters monitored at Prompton Reservoir in 2019

Parameter	(2) Method	Laboratory Limit of Reporting	PADEP Surface Water Quality Criteria	Allowable Hold Times (Days)
Total Alkalinity	SM20 2320 B-11	10.0 mg/L	Min. 20 mg/L CaCO₃	14
Biochemical Oxygen Demand (BOD)	SM5210 B-11	5.0 mg/L	None	2
Total Phosphorus	SM4500-P E	0.01 mg/L	None	28
Diss./Ortho-Phosphate	NA	NA	None	28
Soluble Phosphorus	SM4500-P E	0.007 mg/L	None	28
Total Organic Carbon (TOC)	SM5310 B-11	1.0 mg/L	None	28
Total Inorganic Carbon (TIC) *	NA	NA	None	28
Total Carbon (TOC + TIC) *	NA	NA	None	28
(1) Chlorophyll a	YSI Probe		None	In Situ
Total Kjeldahl Nitrogen	EPA 351.2/ LACHAT	0.20 mg/L	None	28
Ammonia	SM4500 H-11LACHAT	0.20 mg/L	Temp. and pH dependent	28
Nitrate	EPA 353.2/ SM4500NO2B	0.11 mg/L	Maximum 10 mg/L	28
Nitrite	SM4500NO2 B-11	0.01 mg/L	(nitrate + nitrite)	28
Total Dissolved Solids	SM2540 C-11	10.0 mg/L	Maximum 750 mg/L	7
Total Suspended Solids	SM2540 D-11	4.0 mg/L	None	7

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

⁽²⁾ Laboratory Methods Reference:

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

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

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

^{*} Total Inorganic Carbon and Total Carbon were not sampled for in 2019

2.3 TROPHIC STATE DETERMINATION

The trophic state of Prompton Reservoir was determined by methods outlined by Carlson (1977) and EPA (1983). In general, these methods calculate 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 calculations of monthly TSIs (Table-2-1). Secchi disk depth was measured monthly at station PR-3 and used for the TSI calculation. Trophic state determinations were calculated only for Station PR-3 within the reservoir.

2.4 RESERVOIR BACTERIA MONITORING

Monitoring for coliform bacteria contaminants was conducted at Prompton Reservoir five times between 26 June and 11 September 2019. Surface water samples were collected in the same manner as for chemical parameter samples, and analyzed for total coliform and fecal coliform contamination. Table 2-3 presents the test methods, detection limits, PADEP standards, and sample holding times for the bacteria parameters monitored at Prompton Reservoir in 2019. The bacteria analytical method was based on a membrane filtration technique. All of the samples were analyzed within their maximum allowable hold times.

Monthly coliform bacteria counts were compared to the PADEP single sample and swimming beach water quality standard for bacteria. The multiple beach sample standards is defined as a maximum geometric mean of 200 colonies/100-ml based on five samples collected on different days within a 30-day period. Application of this standard is not necessary at Prompton reservoir because swimming and other human/water contact recreation is prohibited in the reservoir. However, it is used in evaluating the bacteria results.

Table 2-3. Water quality test methods, detection limits, PADEP standards, and sample holding times for bacteria parameters monitored at Beltzville Reservoir in 2019.											
Parameter	Total Coliform	Fecal Coliform									
Test method	SM 9223 B	SM 9222 D									
Limit of Quantification	10 clns/100-mls	1 clns/100-mls									
PADEP standard	None	Geometric mean < 200 clns/100-mls or a single sample reading of < 1000 clns/100-mls									
Max. allowable holding time	30 hours	30 hours									
Achieved holding time	< 30 hours	< 30 hours									

3.0 RESULTS AND DISCUSSION

3.1 STRATIFICATION MONITORING

The following sections summarize the results of water quality monitoring for physical and chemical parameters: temperature, dissolved oxygen (DO), and pH. For each parameter, seasonal and spatial patterns of surface water quality measured throughout the watershed, and seasonal and depth related patterns of the lake water column based on measures from the deepest portion of the reservoir (station PR-3) are described. The discussion on stratification is focused on station PR-3 as water quality problems related to depth are generally most severe in deeper water habitats, thus the evaluation will be a conservative one. All of the physical/chemical parameters were measured with a calibrated YSI 6600 V2-4 water quality monitoring 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.

Temperature of the tributary and downstream surface waters of Prompton Reservoir were influenced by seasonal weather patterns and in lake thermal warming patterns during 2019. Maximum temperatures were recorded during the 17 July sampling event (Fig. 3-1). Upstream tributary temperatures at station PR-1S were generally cooler than downstream release temperatures during the sampling season with an average temperature of 19.83°C and ranged from 17.9°C in June to 22.18°C in early July. Downstream temperatures at station PR-4S averaged 21.21°C and ranged from 20.41°C in early September to 21.80°C in late July. The warmer downstream temperatures likely result from thermally warmed waters being released from the reservoir.

The surface water temperatures (0-5 feet) of the reservoir were generally greater than the upstream station PR-1S as a result of in-lake thermal warming. Surface temperatures for the sampling period at reservoir body station PR-3, near the outlet works of the dam, averaged 24.91°C and ranged from 28.01°C in early July to 19.03°C in June. Prompton Reservoir experienced minor stratification with respect to temperature in 2019 (Fig. 3-2). In June, the onset of stratification was observed with the surface temperature (25.92°C) approximately 15.52°C warmer than the lower water column (10.40°C). The onset of de-stratification was evident in early September.

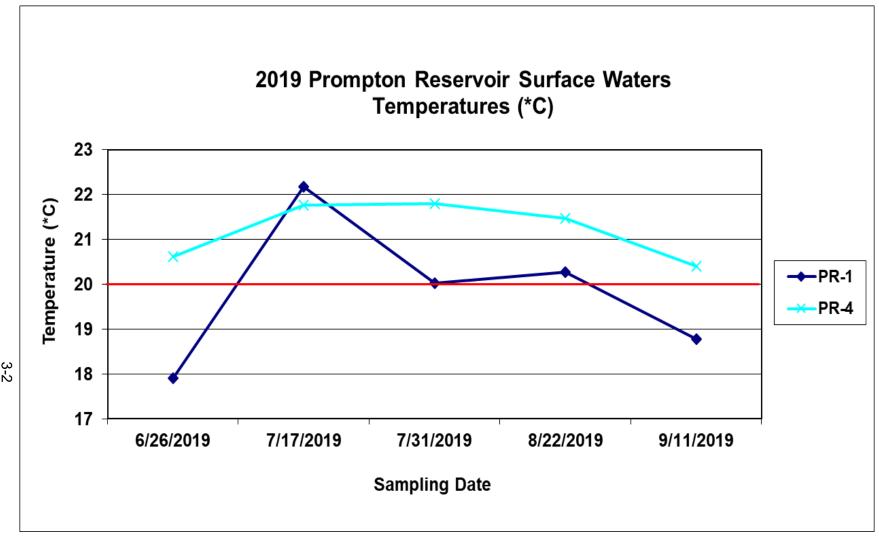


Figure 3-1. Temperature in tributary and outflow surface waters of Prompton Reservoir during 2019. See Appendix A for a summary of plotted values. The coldwater species preference temperature of 20°C is shown as a red line comparison.

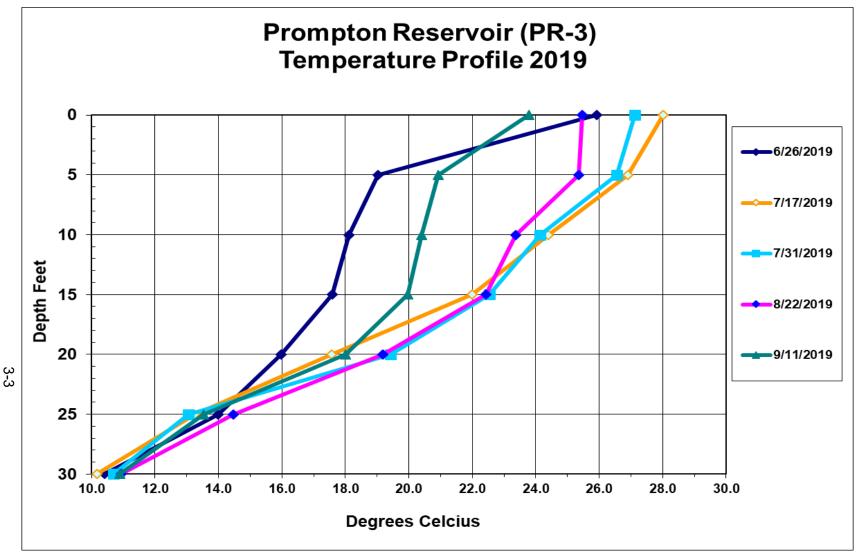


Figure 3-2. Temperature stratification of Prompton Reservoir during 2019 from water quality measured at station PR-3. See Appendix A for a summary of plotted values.

3.1.2 Dissolved Oxygen

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

Dissolved oxygen (DO) in the inflow and outflow surface waters of Prompton Reservoir generally followed a similar seasonal pattern throughout most of the 2019 sampling season (Fig. 3-3). Waters released from the reservoir and measured at station PR-4S had consistently lower dissolved oxygen levels then reservoir inflows at tributary station PR-1S as a result of the release of low oxygen waters from deeper in the reservoir. The greatest difference of DO readings was recorded on 22 August when inflow (PR-1S) DO was 8.66 mg/L and outflow (PR-4S) DO was 6.42 mg/L. Dissolved oxygen concentrations upstream (PR-1S) ranged from 8.58 mg/L in June to 9.11 mg/L in late July with an average seasonal reading of 8.84 mg/L. Dissolved oxygen concentrations downstream (PR-4S) ranged from 6.42 mg/L in August to 7.55 mg/L in September with a seasonal average of 7.14 mg/L.

The stratification of Prompton Reservoir influenced the distribution of DO in the water column during 2019 (Fig. 3-4). In June, the influence of the onset of stratification was apparent, as DO concentrations decreased from 9.96 mg/L at the surface to 0.26 mg/L at the bottom. From most of the sampling season, the lower water column from approximately 15 feet to the bottom was severely depleted of oxygen with concentrations less than 5 mg/L. The release of waters downstream containing lower DO concentrations had some lowering effect on DO levels recorded at downstream station PR-4S. However, the re-aeration of the released waters through the dam conduit system elevated DO concentrations above state criteria.

DO concentrations in the water column of Prompton Reservoir were not in compliance with PADEP water quality standards in late July and August. The Pennsylvania water quality standard for DO is a minimum concentration of 5 mg/L in the epilimnion of stratified lakes. The health of aquatic ecosystems can be impaired by low DO concentrations in the water column. Hypoxia, or conditions of DO concentrations less than 2 mg/L, is generally accepted as the threshold at which the most severe effects on biota occur. In 2019, the lower water column of Prompton was most affected by hypoxia. Hypoxic water was encountered in all months sampled and commonly occupied the lower half of the water column from a 15 foot depth continuing to the bottom. Hypoxia in the lower water column is a symptom of eutrophication. Nutrients in the water column feed explosive algal growth at the surface photic zone. Dead and decaying algae sink to lower levels of the water column and during the process of decay; oxygen is removed from the water.

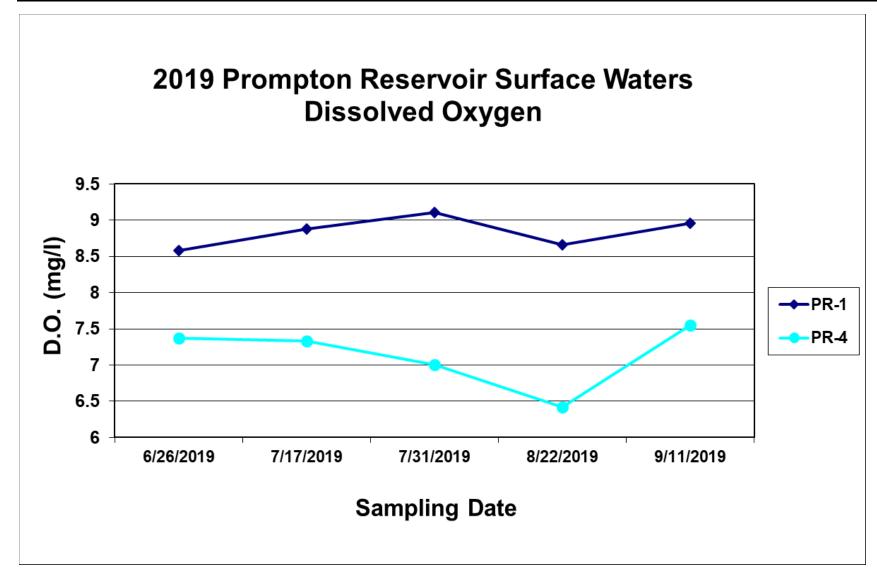


Figure 3-3. Dissolved oxygen in tributary surface waters of Prompton Reservoir during 2019. PADEP minimum DO standard is 5 mg/L. See Appendix A for a summary of plotted values.

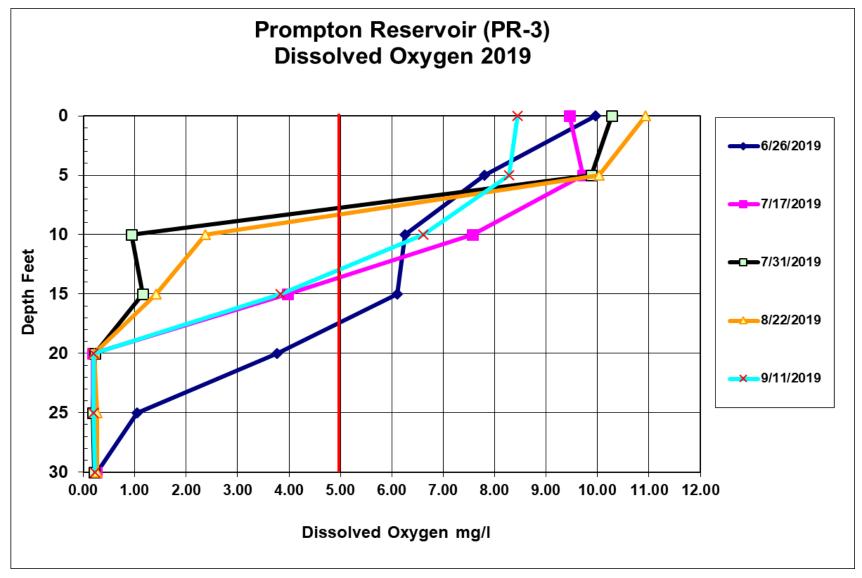


Figure 3-4. Dissolved oxygen stratification of Prompton Reservoir during 2019 from water quality measured at station PR-3. The PADEP minimum DO standard is 5 mg/L. See Appendix A for a summary of plotted value

3.1.3 pH

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

Measures of pH in the surface water tributary stations PR-1S and PR-4S at Prompton Reservoir ranged from 6.92 in July to 8.62 in August (Fig. 3-5). The seasonal pH average for PR-1S and PR-4S were 8.07 and 7.26, respectively.

The water column of Prompton Reservoir maintained a relatively stable pH through most of the sampling season in 2019 with higher lake surface water pH seen in most months sampled (Fig. 3-6). In general the development of stratification and increase in surface temperatures during this time period is reflected with an increase in pH at the surface while the lower water column remained relatively constant. This was recorded in all months sampled. The elevated pH in surface waters of the reservoir during summer periods is most likely due to algal blooms. Blooms were observed at the lake in 2019. As a function of increased productivity, algae remove CO₂ from the water column. Since dissolved CO₂ is slightly acidic, its reduction in the water column is manifested by an increase in pH near the surface waters.

The surface waters of the Prompton Reservoir lake stations were not in compliance with PADEP standards for pH during 2019. The water quality standard for pH is a range of acceptability from 6 to 9. Near surface water readings from June through August exceeded the pH 9.0 criteria.

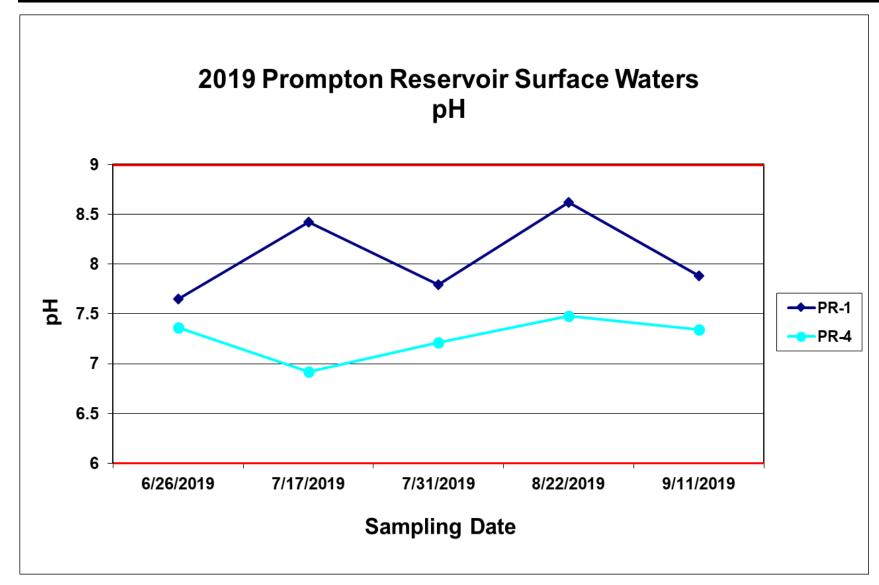


Figure 3-5. Measures of pH in tributary and outflow surface waters of Prompton Reservoir during 2019. PADEP minimum and maximum pH standards are 6 and 9, respectively. See Appendix A for a summary of plotted values.

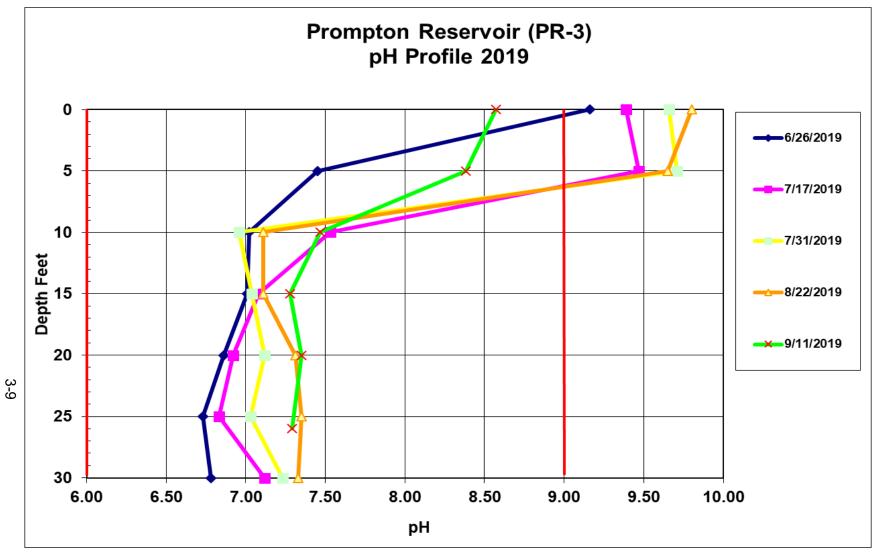


Figure 3-6. Stratification of pH at Prompton Reservoir during 2019, from water quality measured at station PR-3. PADEP minimum and maximum pH standards are 6 and 9, respectively. See Appendix A for a summary of plotted values.

3.2 WATER COLUMN CHEMISTRY MONITORING

The following sections describe temporal, spatial, and depth related patterns for water quality parameters measured at Prompton Reservoir during 2019 (Table 3-2).

3.2.1 Ammonia

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

EPA guidance for ambient water quality criteria for Ammonia in freshwater are dependent on temperature and pH (EPA, 2013). Table 3.1 shows the acute and chronic criteria that are expected to protect freshwater aquatic life. The EPA (2013) also provides tables with the temperature and pH-dependent values of the acute criterion magnitude and the temperature and pH-dependent values of the chronic criterion magnitude. These tables provide an expected ammonia criteria over a wide range of pH and temperature values and can be utilized to evaluate field collected samples.

Table 3.1 Environmental Protection Agency Ammonia Freshwater Criteria 2013										
2013 Final Aquatic Life Criteria for Ar	2013 Final Aquatic Life Criteria for Ammonia (Magnitude, Frequency, and Duration)									
(mg TAN/L) pH 7.0, T=20°C										
Acute (1-hour average) 17										
Chronic (30-day rolling average) 1.9*										
*Not to exceed 2.5 times the CCC as a 4-day averag	e within the 30-days, i.e. 4.8 mg TAN/L at pH 7 and									
20°C, more than once in three years on average.										
Criteria frequency: Not to be exceeded more than one	ce in three years on average.									

Ammonia in the water column of Prompton Reservoir was low during 2019 (Table 3-2). Concentrations measured at all surface and middle water column stations were less than the reporting limit (0.20 mg/L). The highest concentration (1.70 mg/L) was measured in September in the bottom waters of the deeper portion of the reservoir located at station PR-3B. Concentrations in the bottom waters at station PR-3B throughout the sampling season averaged 1.24 mg/L. Increased ammonia is characteristic of low dissolved oxygen environments in stratified lakes resulting from the decomposition of organic materials. Prompton Reservoir experienced these conditions in 2019 resulting in elevated levels of Ammonia in the deeper areas of the reservoir. In 2019, Prompton Reservoir was in compliance with the PADEP water quality standard for ammonia, which is dependent on temperature and pH (Table 3-1).

Table 3-	Table 3-2. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2019												
	•	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
	6/26/2019	23	<10.0	0.02	< 0.20	< 0.01	0.41	NS	35	0.22	2.5	0.03	<4.0
	7/17/2019	55	<3.4	0.02	< 0.20	< 0.01	0.21	NS	42	0.22	2.0	0.02	18.4
	7/31/2019	35	<3.4	< 0.007	< 0.20	< 0.01	0.24	NS	43	0.24	2.5	0.02	<4.0
	8/22/2019	< 5.0	1.1	< 0.007	< 0.20	< 0.01	0.16	NS	68	0.26	2.2	< 0.01	<4.0
PR-1S	9/11/2019	45	<1.0	< 0.007	< 0.20	< 0.01	< 0.11	NS	49	0.30	2.1	< 0.01	<4.0
1 K-15													
	6/26/2019	14	<10	0.02	< 0.20	< 0.01	< 0.11	NS	31	0.40	4.0	0.02	<4.0
	7/17/2019	30	<4.4	0.02	< 0.20	< 0.01	0.48	NS	47	0.55	3.8	0.02	7.4
	7/31/2019	25	4.0	0.008	< 0.20	< 0.01	< 0.11	NS	57	0.42	4.0	< 0.01	5.0
	8/22/2019	31	6.7	< 0.007	< 0.20	< 0.01	< 0.11	NS	61	1.2	4.6	0.02	11.0
PR-2S	9/11/2019	20	4.7	0.008	< 0.20	< 0.01	< 0.11	NS	43	0.42	4.1	0.03	7.3
110 25													

Table 3-	2 continued. Si	ummary	of surfac	e, middle,	and bott	om wate	r quality	monitori	ing data fo	or Prompt	ton Reserv	oir in 201	9
		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
	6/26/2019	25	<10	0.01	< 0.20	< 0.01	< 0.11	NS	32	0.34	3.4	0.02	<4.0
	7/17/2019	29.5	<4.4	< 0.007	< 0.20	< 0.01	< 0.11	NS	39	0.43	3.3	0.02	4.0
	7/31/2019	30	3.8	0.009	< 0.20	< 0.01	< 0.11	NS	59	0.98	4.3	< 0.01	5.0
	8/22/2019	25	4.8	0.009	< 0.20	< 0.01	< 0.11	NS	61	1.10	4.2	0.02	8.0
PR-2M	9/11/2019	30	4.2	0.01	< 0.20	< 0.01	< 0.11	NS	49	1.00	4.0	0.03	8.3
F IX-21VI													
	6/26/2019	<10	<10	0.02	< 0.20	< 0.01	0.24	NS	30	0.44	3.4	0.06	20
	7/17/2019	33	<3.4	0.02	0.21	< 0.01	< 0.11	NS	39	0.63	2.5	0.03	6.7
	7/31/2019	29	<3.4	0.01	< 0.20	< 0.01	< 0.11	NS	54	0.58	3.5	0.03	5.2
	8/22/2019	32	1.3	0.01	0.27	< 0.01	< 0.11	NS	52	0.56	3.2	0.06	6.0
PR-2B	9/11/2019	40	1.6	0.009	< 0.20	< 0.01	< 0.11	NS	43	0.64	3.5	0.05	12.5
1 K-2D													

Table 3-	Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2019												
		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
	6/26/2019	14	<10	0.02	< 0.20	< 0.01	< 0.11	NS	35	0.49	3.8	0.02	<4.0
	7/17/2019	35	<3.4	0.01	< 0.20	< 0.01	< 0.11	NS	49	0.51	3.4	< 0.01	<4.0
	7/31/2019	17	3.6	< 0.007	< 0.20	< 0.01	< 0.11	NS	52	0.96	4.0	0.02	4.2
	8/22/2019	26	5.4	< 0.007	< 0.20	< 0.01	< 0.11	NS	50	0.65	4.6	< 0.01	7.5
PR-3S	9/11/2019	55	3.5	< 0.007	< 0.20	< 0.01	< 0.11	NS	50	0.58	4.2	0.02	5.2
FK-38													
	6/26/2019	<10	<10	0.02	< 0.20	< 0.01	< 0.11	NS	29	0.38	3.8	0.02	<4.0
	7/17/2019	25	<3.4	0.01	< 0.20	< 0.01	< 0.11	NS	46	0.36	3.0	< 0.01	<4.0
	7/31/2019	30	4.9	< 0.007	< 0.20	< 0.01	< 0.11	NS	44	0.35	3.5	0.02	<4.0
	8/22/2019	22	4.8	< 0.007	< 0.20	< 0.01	< 0.11	NS	51	0.51	3.7	< 0.01	4.0
PR-3M	9/11/2019	40	3.2	< 0.007	< 0.20	< 0.01	< 0.11	NS	43	0.43	4.0	0.03	4.2
1 IX-31VI													

Table 3-	Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2019												
		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
	6/26/2019	20	<10	0.01	0.88	< 0.01	< 0.11	NS	36	1.1	4.3	0.05	21
	7/17/2019	31	5.3	0.05	1.2	< 0.01	< 0.11	NS	56	1.7	5.4	0.06	17.3
	7/31/2019	43	<3.4	0.06	1.0	< 0.01	< 0.11	NS	50	1.5	5.5	0.09	17
	8/22/2019	59	7.6	0.04	1.4	< 0.01	< 0.11	NS	67	1.7	6.3	0.10	18
PR-3B	9/11/2019	50	7.3	0.08	1.7	< 0.01	< 0.11	NS	72	0.94	7.5	0.10	18
r K-3D													
	6/26/2019	10	<10	0.02	< 0.20	< 0.01	< 0.11	NS	33	0.47	3.7	0.02	5.6
	7/17/2019	30	<3.4	0.02	< 0.20	< 0.01	0.15	NS	42	0.37	3.0	0.02	43.8
	7/31/2019	34	<3.4	0.02	< 0.20	< 0.01	0.14	NS	52	0.32	3.7	0.03	5.6
	8/22/2019	25.5	1.0	0.02	< 0.20	< 0.01	< 0.11	NS	48	0.48	3.3	0.02	12.2
PR-4S	9/11/2019	21	1.1	< 0.007	< 0.20	< 0.01	< 0.11	NS	52	0.57	3.6	0.02	<4.0
110-45													

< Indicates a result less than the limit of quantification or limit of detection.

NS – Not Sampled

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. In 2019, nitrite concentrations in the waters of Prompton Reservoir measured at all stations and depths were less than the reporting limit of 0.01 mg/L (Table 3-2).

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. In 2019, nitrate concentrations in the lake waters of Prompton Reservoir measured at most stations and depths were less than the reporting limit of 0.11 mg/L (Table 3-2). Higher readings were seen in the lake tributary inflow waters (PR-1s). The maximum nitrate measure of 0.41 mg/L was collected at station PR-1S in June. This upstream tributary station also maintained the highest seasonal mean concentration of 0.23 mg/L.

Prompton Reservoir was in compliance with the PADEP water quality standard for nitrite and nitrate during 2019. The standard is a summed concentration of nitrite and nitrate of less than 10 mg/L. Throughout the monitoring period, a maximum summed concentration for all stations and depths of 0.42 mg/L was measured at the upstream tributary surface water station PR-1S on 26 June.

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 was uniformly low in the water column of Prompton Reservoir during 2019 (Table 3-2). The highest single sample concentration of 1.70 mg/L and seasonal mean concentration of 1.39 mg/L were measured in the bottom water samples at station PR-3B.

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 minimum 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. Many of the deep water measures for total phosphorus taken at Prompton Reservoir in

2019 were greater than the 0.01 mg/L reporting limit (Table 3-2). The highest single concentration of 0.10 mg/L was measured in the lake bottom waters at station PR-3B on 22 August and 11 September. Higher concentrations of phosphorus in the lower water column are characteristic of temperature-stratified lakes. Low DO conditions in deeper waters create a reducing chemical environment that can mobilize phosphorus from bottom sediment. Prompton Reservoir experiences these conditions annually. Lower measurements of TP in lake surface waters at Prompton Reservoir are likely a product of algal phosphorus uptake during photosynthesis.

3.2.5 Dissolved Phosphorus

Dissolved phosphorus (Diss P) concentrations measured at many stations and depths in the water column of Prompton Reservoir were less than the reporting limit of 0.007 mg/L (Table 3-2). The highest single sample concentration of 0.08 mg/L and seasonal mean concentration of 0.05 mg/L were measured in the bottom water samples at station PR-3B.

3.2.6 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. Total dissolved solids in the water column of Prompton Reservoir stayed consistently low during 2019. Concentrations measured at all stations and depths ranged from 29 mg/L to 72 mg/L throughout the monitoring period (Table 3-2). Total dissolved solids measured at Prompton Reservoir in 2019 were in compliance with PADEP water quality standards. The Pennsylvania standard for TDS is concentrations less than 500 mg/L as a monthly average with a maximum concentration of 750 mg/L.

3.2.7 Total Suspended Solids

Total suspended solids (TSS) is 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). During 2019, total suspended solids (TSS) concentrations at all stations and depths ranged between less than the reporting limit of 4.0 mg/L to 43.8 mg/L (Table 3-2). The highest single sample measure of 43.8 mg/L was measured in the downstream surface waters at station PR-4S on 17 July. Uncharacteristically higher readings in water samples can be attributed to sample collection error caused by disturbing bottom sediments inadvertently during sampling and those suspended materials being included in the sample. Higher TSS sample results may reflect this sampling error.

3.2.8 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 waters of Prompton Reservoir were inconclusive in 2019 as a result of inconsistent laboratory reporting limits (Table 3-2). Recordable results ranged from 1.0 mg/L to 7.6 mg/L. In considering the overall infrequency of samples showing higher readings in addition to historical sampling results, it is inferred that Prompton Reservoir and its associated tributaries fluctuated between moderately clean waters with some biodegradable wastes and fairly polluted water, many bacteria and much biodegradable wastes in 2019.

3.2.9 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 of the water's in Prompton Reservoir remained near or greater than the state minimum standard during the 2019 sampling season (Table 3-2). Concentrations measured at all stations and depths during the monitoring period ranged from to <5.0 to 59.0 mg/L. The highest measure was taken at station PR-3B on 22 August. The natural alkalinity of water is largely dependent on the underlying geology and soils within the surrounding watershed. The alkalinity measured at Prompton Reservoir is likely a result of the regional geology and primary productivity. The reservoir waters and surrounding tributaries were in compliance with the PADEP alkalinity criteria in 2019.

3.2.10 Total Organic Carbon

Total organic carbon (TOC) is a measure of the dissolved and particulate organic carbon in water. The bulk of organic carbon in water is composed of humic substances and partly degraded animal and plant materials. High levels of organic carbon coincide with a lowering of dissolved oxygen concentrations. Carbon is a nutrient required for biological processes. Total organic carbon in the water column of Prompton Reservoir was present in low concentrations during 2019 (Table 3-2). Concentrations of TOC at all stations and depths ranged from 2.0 mg/L to 7.5 mg/L.

3.2.11 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. In all months sampled in 2019, chlorophyll a concentrations in the tributary and outflow stream surface waters were less than in-lake surface water concentrations (Appendix A). Concentrations measured in upstream and downstream stream surface waters averaged 2.41 ug/L. Concentrations were consistently higher at the in-lake surface stations where algal productivity would be expected to also be higher. Concentrations at lake stations PR-2 and PR-3, from 0-5 feet of depth, ranged between 3.4 ug/L and 10.80 ug/L with a seasonal average of 7.31 ug/L. Chlorophyll a readings were collected using a YSI 6600 V2-4 chlorophyll sensor.

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 Prompton Reservoir was based on a single sample taken each month at station PR-3 during the sampling season (Figure 3-7).

TSIs calculated for measures of total phosphorus classified Beltzville Reservoir as mesotrophic in June (47.35), late July (47.35), and September (47.35) and oligotrophic in early July (37.35) and August (37.35). TSIs calculated for measures of secchi disk depth classified Prompton Reservoir as eutrophic in late July (56.22), August (63.22), and September (60.00) and mesotrophic in June (49.66) and early July (49.66). TSIs calculated for measures of chlorophyll a classified Prompton Reservoir as eutrophic in June (50.50) and mesotrophic in early July (49.41), late July (49.30), August (45.93), and September (45.99). Chlorophyll a was measured with a YSI 6600 V2-4 chlorophyll sensor.

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 in the mesotrophic range during most of the 2019 sampling period.

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 (1977) calculated TSI values, the trophic condition of Prompton Reservoir would be considered mesotrophic and borderline eutrophic during most of the 2019 sampling season.

Table 3-3. EPA trophic classification criteria and monthly measures for Prompton Reservoir in 2019.										
Water Quality Variable Oligo- trophic Variable Oligo- trophic Eutrophic Lettrophic June July July August September										
Total phos. (ppb)	<10	10-20	>20	<20	<10	<20	<10	<20		
Chlorophyll (ppb)	<4	4-10	>10	7.6	6.8	6.73	4.77	4.8		
Secchi depth (m)	>4	2-4	<2	2.05	2.05	1.30	0.80	1.00		

3.4 RESERVOIR BACTERIA MONITORING

Two forms of coliform bacteria contamination were monitored in the tributary and lake surface waters at Prompton Reservoir during 2019 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 and dates ranged from <1 colonies/100-ml to >20000 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 has been replaced with an e-coli criteria. For purposes of the 2019 reservoir bacteria sampling, previous fecal coliform criteria was used to evaluate bacteria contamination in the reservoir. Fecal contamination was low in Prompton Reservoir and elevated in its tributaries during 2019. The previous 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. Given that our regular monitoring was completed on one day 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 Prompton Reservoir did not exceed this standard in 2019. Water contact recreation is not permitted at Prompton Reservoir.

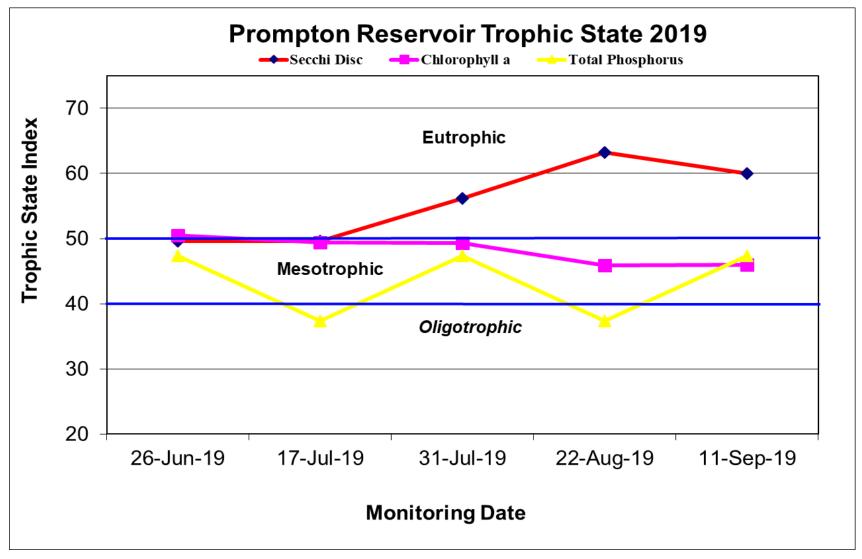


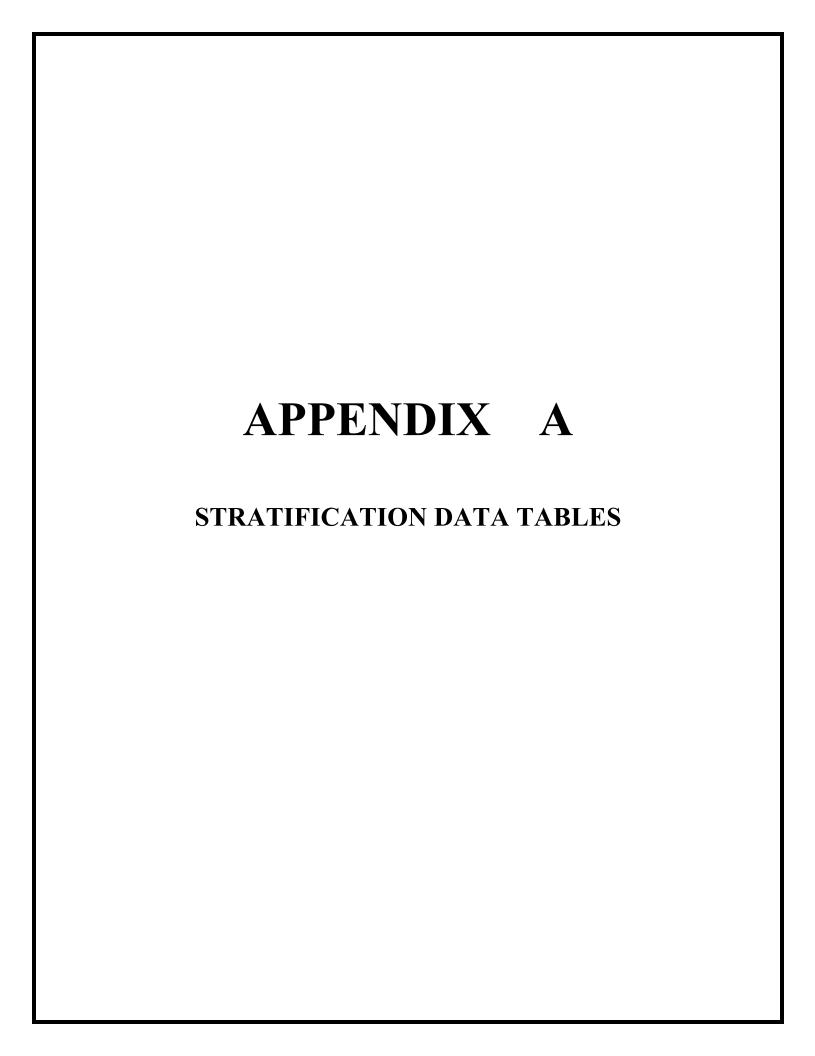
Figure 3-7. Trophic state indices calculated from secchi disk depth, concentrations of chlorophyll *a*, and total phosphorus measured in surface waters of Prompton Reservoir during 2019.

Table 3-4. Bacteria counts (colonies/100 ml) at Prompton Reservoir during 2019. Shaded values exceed the Pennsylvania Department of Health single sample water quality standard for bathing beaches. NS = Not Sampled in 2019

STATION	DATE	То	otal Coliform (TC)		cal Coliform (FC)	Escherichia coli		
	6/26/2019		13600		23	NS		
	7/17/2019		16500		60	NS		
PR-1S	7/31/2019	>	2000		0	NS		
	8/22/2019	<	1		43	NS		
	9/11/2019	>	2000		22	NS		
	6/26/2019		700		1	NS		
	7/17/2019		4300		1	NS		
PR-2S	7/31/2019		880	<	1	NS		
	8/22/2019		1320		2	NS		
	9/11/2019		4200		13	NS		
	6/26/2019		44		1	NS		
	7/17/2019		1964	<	1	NS		
PR-3S	7/31/2019		780	>	1	NS		
	8/22/2019		1320	<	1	NS		
	9/11/2019		5700	<	1	NS		
	6/26/2019	>	20000		10	NS		
PR-4S	7/17/2019	>	20000		9	NS		
	7/31/2019	>	2000		12	NS		
	8/22/2019	>	20000		90	NS		
	9/11/2019		41000		5	NS		

4.0 REFERENCES

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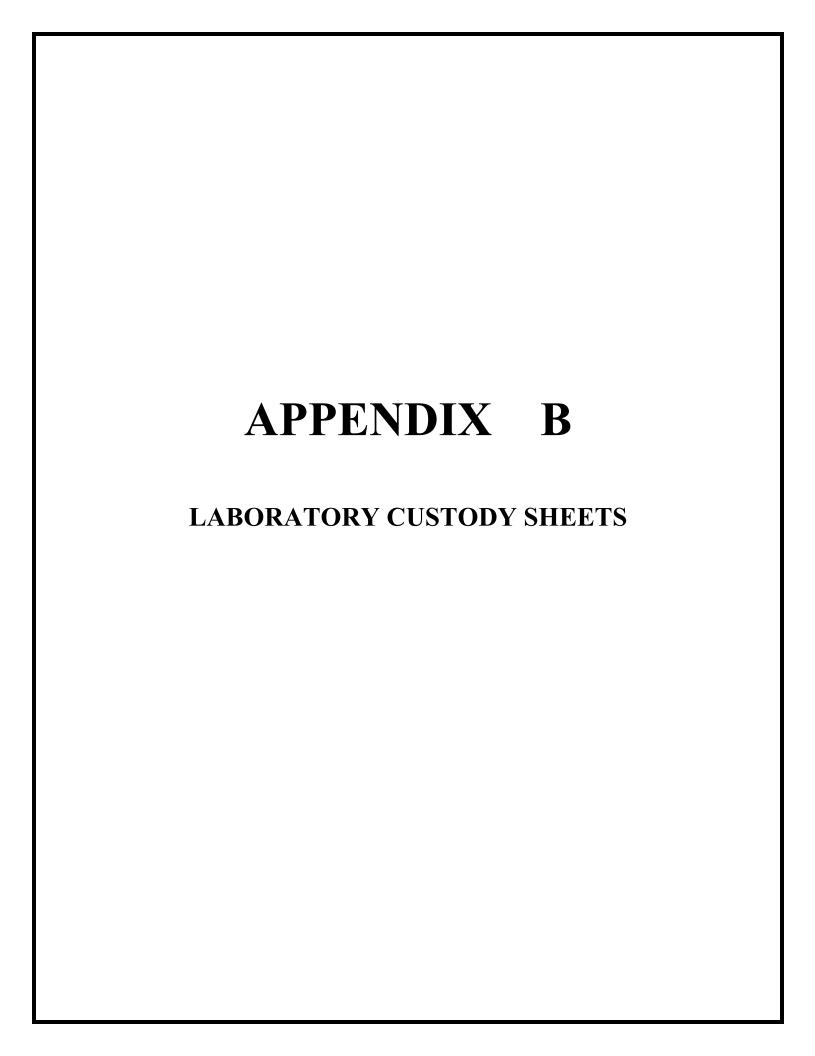


2019 Prompton WQ Profile Summary

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
PR-1S	6/26/2019	11:40:56	0.5	17.9	90.5	8.58	7.65	-44.8	198.3	0.6	1.8	0.059
Upstream	7/17/2019	12:04:12	0.5	22.18	101.9	8.88	8.42	-90.8	199.7	4.8	1.2	0.08
	7/31/2019	12:02:57	0.5	20.02	100.3	9.11	7.79	-53.6	211.3	0.7	2.1	0.076
	8/22/2019	9:52:51	0.5	20.28	95.8	8.66	8.62	-102	95.2	0.3	2.4	0.08
	9/11/2019	11:44:06	0.5	18.77	96.1	8.96	7.88	-58.4	218.4	0	2	0.078
		13:02:21	0.5	25.33	121.8	10.01	9.27	-142	115.3	1.3	8.4	0.061
PR-2		13:01:39	5	19.13	91.3	8.44	7.39	-30	155.3	2	9.5	0.052
Mid-Lake	6/26/2019	13:00:11	10	18.08	72	6.81	7.1	-12.6	159.6	1.4	3.4	0.051
		12:58:55	15	17.08	59.3	5.72	7.04	-9.6	158	2.7	1.9	0.052
		12:57:54	20	16.2	49.2	4.84	7.09	-12.5	155.4	5.1	2.6	0.054
L _		L										
PR-2		13:20:20	0.5	28.21	125.2	9.76	9.41	-152	79.2	2.4	3.4	0.076
Mid-Lake		13:19:36	5	26.3	119.8	9.67	9.39	-150	78	4	6.5	0.073
	7/17/2019	13:18:45	10	24.08	71.5	6.01	7.27	-23.3	108.5	2.2	7.5	0.073
		13:17:05	15	21.65	31.1	2.74	6.98	-6	101	3.2	3.7	0.08
L		13:16:00	18	20.37	14.9	1.34	6.94	-3.3	87.8	5.1	3.2	0.081
PR-2		13:14:42	0.5	27.33	136.9	10.84	9.71	-170	61.7	6.5	8.7	0.081
Mid-Lake		13:14:06	5	26.23	131.3	10.61	9.69	-168	55.1	5.8	7.4	0.078
	7/31/2019	13:12:34	10	23.89	25.8	2.17	6.93	-2.8	56.1	4.4	2.6	0.076
		13:11:15	15	22.67	10.4	0.9	6.86	0.9	71.9	5.7	3.5	0.080
L		13:10:16	18	22	7.5	0.66	6.9	-1.3	77.3	5.9	00	0.085
								100				
		9:16:09	0.5	25.91	143.3	11.65	9.89	-180	54.1	14.8	10.8	0.085
PR-2	0/00/00/	9:14:58	5	25.81	131.9	10.73	9.79	-174	53.9	13.5	10.2	0.08
Mid-Lake	8/22/2019	9:13:07	10	23.26	24.5	2.09	7.07	-11.2	79.4	1	2.6	0.076
		9:11:19	15	21.92	18.4	1.61	7.07	-11.1	68.3	1.4	1.7	0.078
		9:09:04	20	20.56	3.2	0.29	7.15	-16	31.2	41.5	2.7	0.087
						 						
PR-2		12.24.46	0.5	24 57	100.0	0.45	0.04	100	92 E	10.0	7.4	0.079
	0/44/0040	13:24:16 13:22:41	0.5 5	24.57 21.1	109.9 99	9.15 8.81	9.04 8.75	-128	82.5	12.3 12.3	7.4	0.079
Mid-Lake	9/11/2019		10		62.1	5.62	7.35	-110 -27.8	70.1 56.5	6.4	6.6 4.1	0.072
		13:20:05 13:17:54	15	20.23 19.45	41.6	3.83	7.35	-27.8	10.4	5.2	2.9	0.071
		13:17:54	20	18.23	2.6	0.24	7.48	-29. <i>1</i>	-163	5.2 -0.8	5.9	0.072
		13.10.00	20	10.23	۷.0	0.24	1.40	-33	-103	-0.0	۵.5	0.000

2019 Prompton WQ Profile Summary

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
PR-3		12:41:59	0.5	25.92	122.5	9.96	9.16	-136	50.6	1.1	8.7	0.061
Upstream		12:40:41	5	19.03	84.1	7.8	7.45	-33.2	83.5	2.1	10.8	0.051
of Dam	6/26/2019	12:39:01	10	18.11	66.2	6.25	7.02	-8.4	76.1	1.6	3.3	0.051
		12:37:46	15	17.59	63.9	6.1	7.01	-7.4	62.3	1.3	2.8	0.05
Secchi		12:35:59	20	15.97	38.1	3.77	6.86	1	30.2	2.5	2.8	0.055
2.05		12:33:59	25	13.98	10.2	1.05	6.73	8.5	-34.6	2.6	2	0.058
		12:32:46	30	10.4	2.3	0.26	6.78	5.6	-87.6	6.8	2.7	0.07
PR-3		12:57:48	0.5	28.01	120.9	9.46	9.39	-151	49	1.7	3.8	0.074
Upstream		12:57:06	5	26.9	121.6	9.71	9.47	-155	38.8	1.8	4.2	0.073
of Dam	7/17/2019	12:56:02	10	24.4	90.6	7.57	7.53	-38.3	45.9	2.3	12.4	0.07
		12:54:34	15	21.99	45.4	3.97	7.08	-11.7	22.9	0.9	7.4	0.07
Secchi		12:53:06	20	17.56	2	0.19	6.92	-2.4	-53.7	1.9	3.9	0.07
2.05		12:51:47	25	13.25	1.7	0.18	6.83	2.5	-74.2	4.3	3.9	0.072
		12:49:38	30	10.17	2.3	0.25	7.12	-14.1	-139	13.2	4	0.126
PR-3		12:50:23	0.5	27.13	129.2	10.27	9.66	-167	67.8	4	7.9	0.078
Upstream		12:47:44	5	26.56	123	9.88	9.71	-170	24	3.7	8.3	0.078
of Dam		12:46:33	10	24.13	11.1	0.93	6.96	-5	-14.7	0.4	4	0.075
	7/31/2019	12:45:50	15	22.55	13.5	1.16	7.04	-9.3	-28.2	0.4	2.3	0.077
Secchi		12:44:37	20	19.43	2.4	0.22	7.12	-13.9	-89.7	2.1	3.3	0.083
1.3		12:43:33	25	13.04	1.8	0.19	7.03	-9.1	-127	0.2	2.6	0.084
		12:42:06	30	10.7	1.8	0.21	7.23	-20	-150	7.7	4.2	0.132
Γ												
PR-3		8:47:54	0.5	25.47	133.4	10.93	9.8	-174	47.2	10.9	6.6	0.081
Upstream		8:46:31	5	25.36	122.2	10.03	9.65	-165	40.4	9.7	6.1	0.079
of Dam		8:44:22	10	23.37	27.8	2.37	7.11	-13.8	9.9	0	2.2	0.074
	8/22/2019	8:42:54	15	22.44	16.3	1.41	7.11	-13.8	-27.5	0.1	2.1	0.073
Secchi		8:40:49	20	19.18	2.3	0.21	7.31	-25	-139	0	2.1	0.088
0.8		8:38:55	25	14.47	2.6	0.26	7.35	-27	-164	5.9	1.8	0.099
		8:35:43	30	10.94	2.4	0.27	7.33	-25.6	-180	14.4	4.6	0.164
PR-3		12:53:36	0.5	23.78	99.8	8.44	8.57		82.8	10.6	5	0.077
Upstream		12:52:28	5	20.92	92.7	8.28	8.38	-88.1	76.5	9	5.8	0.072
of Dam		12:50:37	10	20.4	73.3	6.61	7.47	-34.7	68.2	7.7	3.6	0.071
	9/11/2019	12:48:11	15	19.97	42.1	3.83	7.28	-23.6	40.6	3.1	2.6	0.073
Secchi		12:44:24	20	18.01	2.1	0.2	7.35	-27.6	-149	0.4	2.3	0.099
1.0	1.0	12:42:58	25	13.54	1.9	0.2	7.29	-23.6	-167	1.5	2.4	0.127
		12:41:34	30	10.88	2	0.23	7.35	-26.8	-214	159	8.3	0.245
PR-4S	6/26/2019	11:29:41	0.5	20.62	82.1	7.37	7.36	-28.5	162.3	0.7	3.6	0.055
Dam	7/17/2019	11:47:41	0.5	21.76	83.5	7.33	6.92	-2.7	193	0.3	2.7	0.071
Outfall	7/31/2019	11:49:34	0.5	21.8	79.9	7.01	7.21	-19.2	201.5	0.5	2.5	0.077
	8/22/2019	10:07:19	0.5	21.47	72.7	6.42	7.48	-35.4	136.4	0.6	2.2	0.077
	9/11/2019	11:24:26	0.5	20.41	83.7	7.55	7.34	-27.2	186.2	9.7	3.6	0.074





Dayton, NJ 08/01/19

The results set forth herein are provided by SGS North America Inc.

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Automated Report



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC90655

Sampling Date: 06/26/19



Army Corps of Engineers

joseph.m.loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 21

TNI TABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS

Sections:

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Table of Contents

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	8
Section 4: Sample Results	10
4.1: JC90655-1: PR-1S	11
4.2: JC90655-2: PR-2S	12
4.3: JC90655-3: PR-2M	13
4.4: JC90655-4: PR-2D	14
4.5: JC90655-5: PR-3S	15
4.6: JC90655-6: PR-3M	
4.7: JC90655-7: PR-3D	17
4.8: JC90655-8: PR-4S	18
Section 5: Misc. Forms	19
5.1: Chain of Custody	20



Sample Summary

USACE-Philadelphia District

Job No:

JC90655

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC90655-1	06/26/19	11:45 GW	06/26/19	AQ	Surface Water	PR-1S
JC90655-2	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2S
JC90655-3	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2M
JC90655-4	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2D
JC90655-5	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3S
JC90655-6	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3M
JC90655-7	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3D
JC90655-8	06/26/19	11:00 GW	06/26/19	AQ	Surface Water	PR-4S

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District Job No JC90655

Site: Philadelphia District, Reservoir Sampling Report Date 7/12/2019 5:50:36 PM

On 06/26/2019, 8 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC90655 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ Batch ID: GP22277

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90654-1DUP, JC90654-1MS were used as the QC samples for Nitrogen, Total Kjeldahl.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ Batch ID: GP22264

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90660-2DUP, JC90660-2MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

Friday, July 12, 2019 Page 1 of 4

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ Batch ID: R179597

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179598

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-3 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179599

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179600

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179601

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-6 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AO Batch ID: R179602

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-7 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179603

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-8 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179610

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC90655-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Friday, July 12, 2019 Page 2 of 4

General Chemistry By Method SM2320 B-11

Matrix: AQ Batch ID: GN97287

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90585-9DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC90655-2 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC90655-3 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC90655-1 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

Matrix: AO Batch ID: GN97288

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90654-1DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC90655-6 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC90655-5 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC90655-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC90655-8 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC90655-7 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

General Chemistry By Method SM2540 C-11

Matrix: AQ Batch ID: GN97041

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90649-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM2540 D-11

Matrix: AO Batch ID: GN97010

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90659-3DUP were used as the QC samples for Solids, Total Suspended.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AO Batch ID: GP22314

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90585-14DUP, JC90585-14MS, JC90585-14MSD were used as the QC samples for Nitrogen, Ammonia.

Matrix: AQ Batch ID: GP22315

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90655-5DUP, JC90655-5MS, JC90655-5MSD were used as the QC samples for Nitrogen, Ammonia.

Friday, July 12, 2019 Page 3 of 4

General Chemistry By Method SM4500NO2 B-11

Matrix: AQ Batch ID: GN96916

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90655-4DUP, JC90655-4MS were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AQ Batch ID: GP22068

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90709-2DUP were used as the QC samples for BOD, 5 Day.

General Chemistry By Method SM5310 B-11

Matrix: AQ Batch ID: GP22238

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC90655-1MS, JC90655-1MSD were used as the QC samples for Total Organic Carbon.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Friday, July 12, 2019 Page 4 of 4

Summary of Hits Job Number: JC90655

USACE-Philadelphia District Account:

Philadelphia District, Reservoir Sampling 06/26/19 **Project:**

Collected:

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC90655-1	PR-1S					
Alkalinity, Total Nitrogen, Nitrate Nitrogen, Nitrate Nitrogen, Total I Solids, Total Dis Total Organic Ca	, b e + Nitrite Kjeldahl solved	23.0 0.41 0.41 0.22 35.0 2.5	10 0.11 0.10 0.20 10 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA353.2/SM4500NO2B EPA 353.2/LACHAT EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11
JC90655-2	PR-2S					
Alkalinity, Total Nitrogen, Total I Solids, Total Dis Total Organic Ca	Kjeldahl solved	14.0 0.40 31.0 4.0	10 0.20 10 1.0		mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11
JC90655-3	PR-2M					
Alkalinity, Total Nitrogen, Total I Solids, Total Dis Total Organic Ca	Kjeldahl solved	25.0 0.34 32.0 3.4	10 0.20 10 1.0		mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11
JC90655-4	PR-2D					
Nitrogen, Nitrate Nitrogen, Nitrate Nitrogen, Total I Solids, Total Dis Solids, Total Sus Total Organic Ca	e+ Nitrite Kjeldahl solved pended	0.24 0.24 0.44 30.0 20.0 3.4	0.11 0.10 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	EPA353.2/SM4500NO2B EPA 353.2/LACHAT EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC90655-5	PR-3S					
Alkalinity, Total Nitrogen, Total I Solids, Total Dis Total Organic Ca	Kjeldahl solved	14.0 0.49 35.0 3.8	10 0.20 10 1.0		mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11
JC90655-6	PR-3M					
Nitrogen, Total I Solids, Total Dis Total Organic Ca	solved	0.38 29.0 3.8	0.20 10 1.0		mg/l mg/l mg/l	EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11

Summary of Hits Job Number: JC90655

Account: USACE-Philadelphia District

Project: Philadelphia District, Reservoir Sampling

Collected: 06/26/19

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL M	MDL	Units	Method
JC90655-7 PR-3D					
Alkalinity, Total as CaCO3 ^a Nitrogen, Ammonia Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended Total Organic Carbon JC90655-8 PR-4S	20.0 0.88 1.1 36.0 21.0 4.3	10 0.20 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM4500NH3 H-11LACHAT EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
Alkalinity, Total as CaCO3 ^c Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended Total Organic Carbon	10.0 0.47 33.0 5.6 3.7	10 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Sample was titrated to a final pH of 4.2.



Dayton, NJ

Section 4

Sample Results	
Report of Analysis	

4

Report of Analysis

Client Sample ID: PR-1S Lab Sample ID: JC90655-1

Lab Sample ID:JC90655-1Date Sampled:06/26/19Matrix:AQ - Surface WaterDate Received:06/26/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	23.0	10	mg/l	1	07/08/19 21:03	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 11:43		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 15:44	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	0.41	0.11	mg/l	1	07/09/19 16:13	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.41	0.10	mg/l	1	07/09/19 16:13	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 13:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.22	0.20	mg/l	1	07/12/19 13:30	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	35.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	2.5	1.0	mg/l	1	07/08/19 23:26	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-2S Lab Sample ID: JC90655-2

Lab Sample ID:JC90655-2Date Sampled:06/26/19Matrix:AQ - Surface WaterDate Received:06/26/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	14.0	10	mg/l	1	07/08/19 21:03	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 11:45	RI	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 15:46	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/09/19 16:14	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/09/19 16:14	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 13:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.40	0.20	mg/l	1	07/12/19 13:31	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	31.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	4.0	1.0	mg/l	1	07/09/19 00:01	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.2.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-2M Lab Sample ID: JC90655-3

Lab Sample ID:JC90655-3Date Sampled:06/26/19Matrix:AQ - Surface WaterDate Received:06/26/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

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Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	25.0	10	mg/l	1	07/08/19 21:03	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 11:48	RI	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 15:47	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/09/19 16:15	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/09/19 16:15	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 13:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.34	0.20	mg/l	1	07/12/19 13:32	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	32.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	3.4	1.0	mg/l	1	07/09/19 00:12	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

4

Report of Analysis

Client Sample ID: PR-2D Lab Sample ID: JC90655-4

Matrix: AQ - Surface Water

Date Sampled: 06/26/19
Date Received: 06/26/19
Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	< 10	10	mg/l	1	07/08/19 21:56	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 11:50		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 15:48	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	0.24	0.11	mg/l	1	07/09/19 16:16	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.24	0.10	mg/l	1	07/09/19 16:16	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 13:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.44	0.20	mg/l	1	07/12/19 13:33	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	30.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	20.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	3.4	1.0	mg/l	1	07/09/19 00:25	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.2.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Client Sample ID: PR-3S Lab Sample ID:

JC90655-5 **Date Sampled:** 06/26/19 Matrix: AQ - Surface Water **Date Received:** 06/26/19 Percent Solids: n/a

Report of Analysis

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	14.0	10	mg/l	1	07/08/19 21:56	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 11:52		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 16:01	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/09/19 16:18	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/09/19 16:18	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 13:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.49	0.20	mg/l	1	07/12/19 13:33	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	35.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	3.8	1.0	mg/l	1	07/09/19 01:00	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.2.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-3M Lab Sample ID: JC90655-6

Lab Sample ID:JC90655-6Date Sampled:06/26/19Matrix:AQ - Surface WaterDate Received:06/26/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	< 10	10	mg/l	1	07/08/19 21:56	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 12:17	RI	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 16:03	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/09/19 16:19	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/09/19 16:19	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 13:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.38	0.20	mg/l	1	07/12/19 13:34	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	29.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	3.8	1.0	mg/l	1	07/09/19 01:12	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.2.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-3D Lab Sample ID: JC90655-7

Lab Sample ID:JC90655-7Date Sampled:06/26/19Matrix:AQ - Surface WaterDate Received:06/26/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	20.0	10	mg/l	1	07/08/19 21:56	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 12:18		SM5210 B-11
Nitrogen, Ammonia	0.88	0.20	mg/l	1	07/11/19 16:04	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/09/19 16:20	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/09/19 16:20	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 15:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.1	0.20	mg/l	1	07/12/19 13:35	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	36.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	21.0	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	4.3	1.0	mg/l	1	07/09/19 01:23	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-4S Lab Sample ID: JC90655-8

Lab Sample ID:JC90655-8Date Sampled:06/26/19Matrix:AQ - Surface WaterDate Received:06/26/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	10.0	10	mg/l	1	07/08/19 21:56	MS	SM2320 B-11
BOD, 5 Day	< 10	10	mg/l	1	06/28/19 10:59		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/11/19 16:06	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/09/19 16:21	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/09/19 16:21	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	06/27/19 15:00	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.47	0.20	mg/l	1	07/12/19 13:36	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	33.0	10	mg/l	1	06/30/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	5.6	4.0	mg/l	1	06/29/19 12:24	RC	SM2540 D-11
Total Organic Carbon	3.7	1.0	mg/l	1	07/09/19 01:35	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.2.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)



Misc. Forms

Dayton, NJ

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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JC90655: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number: JO	C90655		Client:	USACE-PHILADELPHIA DIS		DISTRICT	Project: PH	ISTRICT	CT, RESERVOIR SAMPL				
Date / Time Received: 6/	26/2019	7:16:00 P	M	Delivery M	Delivery Method:			Airbill #'s:					
Cooler Temps (Raw Measu	•		, ,.		. ,.								
Cooler Temps (Correc	ctea) *C	Cooler	1: (3.1);	Cooler 2: ((3.2); (Cooler	3: (3.2);						
Cooler Security	Y or	N_			Υ	or N	Sample Integri	ty - Document	<u>ation</u>	<u>Y</u>	or N		
1. Custody Seals Present:	_	ш .	. COC P		✓		1. Sample labels	s present on bottl	es:	\checkmark			
2. Custody Seals Intact:	✓	4. Si	mpl Date	s/Time OK	✓		2. Container labe	eling complete:		\checkmark			
Cooler Temperature	<u> Y</u>	or N					3. Sample conta	iner label / COC	agree:	\checkmark			
1. Temp criteria achieved:	✓						Sample Integr	ity - Condition		<u>Y</u>	or N		
2. Cooler temp verification:		IR Gun					Sample recvd	=	•	✓			
3. Cooler media:		Ice (Bag)					2. All containers			✓			
4. No. Coolers:	-	3					3. Condition of s	ample:	Intact				
Quality Control Preservat	tion Y	or N	N/A				Sample Integr	ity - Instructio	ns	Υ	or N	N/A	
1. Trip Blank present / cooler	: [✓					Analysis requ			<u> </u>			
2. Trip Blank listed on COC:		✓						ved for unspecifie	ed tests		✓		
3. Samples preserved proper	rly: 🔽						3. Sufficient vol	ume recvd for an	alysis:	~			
4. VOCs headspace free:			✓				4. Compositing	instructions clea	r:			\checkmark	
							5. Filtering instr	uctions clear:				~	
Test Strip Lot #s:	pH 1-12:	2	29517		р	H 12+:	208717	Other	: (Specify)				
Comments													
SM089-03 Rev. Date 12/7/17													

JC90655: Chain of Custody

Page 2 of 2



Dayton, NJ 07/29/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC90655X

Sampling Date: 06/26/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 12

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 Please share your ideas about how we can serve you better at:

EHS.US.CustomerCare@sgs.com

Sections:

-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	4
Section 3: Misc. Forms	10
3.1: Chain of Custody	11





Sample Summary

USACE-Philadelphia District

Job No: JC90655X

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC90655-1X	06/26/19	11:45 GW	06/26/19	AQ	Surface Water	PR-1S
JC90655-2X	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2S
JC90655-5X	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3S
JC90655-8X	06/26/19	11:00 GW	06/26/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis



Analytical Report

Serialized: 07/25/2019 12:13pm QC36

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130

DAYTON,NJ 08810

Regarding:

SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

PROJECT ID:

W09769

LABORATORY REPORT NUMBER:

L7139323

REVISED REPORT NOTIFICATION

The chain of custody was added to the report.

Authorized by: Douglas J. Gump Client Services Manager

D21/1/

Eurofins QC, LLC

Analytical Report

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

PIN: 28748

Regarding: KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

	9, SGS NORTH AMERICA, INC. 9, SGS NORTH AMERICA, INC.		P.O. No:		Inv. No: PWSID No:	PI
L7139323-1 PR-1S	e Description ceived Date/Time/Temp 06/26	/19 05:20pm 8.1 C	Iced (Y/N): Y		ate/Time/Temp 11:45am NA C	Sampled by Customer
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONMENTAI	L MICROBIOLOGY PR-1S					
Total Coliform, MF Fecal Coliform, MF	13600 E 23	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	06/26/19 07:38PM LK 06/26/19 06:51PM ZS
L7139323-2 PR-2S	le Description ceived Date/Time/Temp 06/26	/19 05:20pm 8.1 C	Iced (Y/N): Y		ate/Time/Temp 01:00pm NA C	Sampled by Customer
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONMENTAI	L MICROBIOLOGY PR-2S					
Total Coliform, MF Fecal Coliform, MF	700 1	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	06/26/19 07:38PM LK 06/26/19 06:51PM ZS

This report is a revision of report number 6530336 Serial Number: 6530367

Eurofins QC, LLC

Analytical Report

	: W09769, SGS NORTH W09769, SGS NORTH			P.O. No:		Inv. No: PWSID No:	PI
Sample ID L7139323-3	Sample Description PR-3S Received Date/Tir	me/Temp 06/2	26/19 05:20pm 8.1 C	Iced (Y/N): Y		ate/Time/Temp 12:30pm NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	IENTAL MICROBIOI	LOGY PR-3	3S				
Total Coliform Fecal Coliforn		44 1	cfu/100ml cfu/100ml	SM 9222B SM 9222D	100 100	1	06/26/19 07:38PM LK 06/26/19 06:51PM ZS
Sample ID L7139323-4	Sample Description PR-4S Received Date/Tir	ne/Temp 06/2	26/19 05:20pm 8.1 C	Iced (Y/N): Y		ate/Time/Temp 11:00am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	IENTAL MICROBIOI	LOGY PR-4	IS				
Total Coliform Fecal Coliforn	,	>20000 10	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	06/26/19 06:36PM LK 06/26/19 06:51PM ZS

Sample Comments | Result Qualifiers:

L7139323-1:

PIN: 28748

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.



This report is a revision of report number 6530336 Serial Number: 6530367



DEFINITIONS

The following terms or abbreviations are used in this report:

Eurofins QC, LLC (EQC)

<	Less than: In conjunction with a numerical value,							
_ `	indicates a concentration less than RL / MDL							
	Greater than: In conjunction with a numerical value,							
>	indicates a concentration greater than RL / MDL							
CFU	Colony Forming Unit							
DF	Dilution Factor (For Microbiology, DF = volume of							
DF	sample tested)							
DRY	Result was reported on a dry weight basis							
MCL	EPA recommended "Maximum Contaminant Level"							
MDL	Method Detection Limit							
MF	Membrane Filtration							
MPN	Most Probable Number							
ND	For odor test: No Odor Observed							
ND	For all other tests: Analyte concentration Not							
ND	Detected greater than the RL / MDL							

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB (µg/L)	Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
PPM (mg/L)	Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation (LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Data Qualifiers

J	Estimated value > MDL, but < RL
Ť	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
Е	Estimated CFU count (Microbiology)
	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- · All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been
 performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for
 testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly)
 to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing
 results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Jordan Thorngren (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ:	PA093	NY:	12080	MD: 357
East Rutherford Facility Vineland Facility Wind Gap Facility	State ID- State ID- State ID-	NJ: 02015 NJ: 06005 NJ: PA001					

CHAIN OF CUSTODY

SGS North America Inc. - Dayton 百

the first that the same of the	2235 Route 130, Dayton, NJ 08810	FAX: 732-329-3499/348	www.sgs.com/ehsusa
	2235 Route 130,	732-329-0200 F	WWW.Sgs.

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Fage T of T Bottle Order Comm's

SGS Job #

* Received by works Micro at 1735. Covid not analyze within sample hold time. Samples not analyzed. Pages of 6-26-19

8.1° (Tab (10ed 1 ECC



Dayton, NJ

Misc. Forms	
Custody Documents and Other Forms	
Includes the following where applicable: • Chain of Custody	

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JC90655X: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number:	JC9065	5	с	lient:	USACE-PHILADELPHIA DISTRICT		DISTRICT	Project: PHILADELPHIA DISTRICT, RESERVOIR SAMPL							
Date / Time Received:	6/26/20	19 7:	16:00 PM	<u> </u>	Delivery Method:				Airbill #'s:						
Cooler Temps (Raw Mea	•			` '		` ''		· //							
Cooler Security 1. Custody Seals Present: 2. Custody Seals Intact: Cooler Temperature	<u>Y o</u> ✓] 3. (resent: es/Time OK	<u>Y</u> ✓	or N	Sample labels Container lab	ity - Documentation s present on bottles: eling complete: iner label / COC agree:	Y V V	or N				
Temp criteria achieved: Cooler temp verification Cooler media: No. Coolers:			R Gun ce (Bag)					Sample Integral 1. Sample record 2. All containers 3. Condition of s	accounted for:	Y ✓	or N				
Quality Control_Preserv 1. Trip Blank present / coo 2. Trip Blank listed on COO 3. Samples preserved prop 4. VOCs headspace free:	oler: C:	Y	or N	N/A	1			Analysis requ Bottles recei Sufficient vol	uested is clear: ved for unspecified tests ume recvd for analysis: instructions clear:	Y	or N	N/A			
Test Strip Lot #s:	pH 1-	12: _	229	9517		ŗ	oH 12+:	5. Filtering instr	Other: (Specify)			✓			
Comments															

SM089-03 Rev. Date 12/7/17

JC90655X: Chain of Custody

Page 2 of 2



Dayton, NJ 07/18/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC90655XA

Sampling Date: 06/26/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 18

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 Please share your ideas about how we can serve you better at: EHS.US.CustomerCare@sgs.com

Sections:

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-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	5
Section 3: Misc. Forms	10
3.1: Chain of Custody	17







Sample Summary

USACE-Philadelphia District

Job No: JC90655XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC90655-1F	06/26/19	11:45 GW	06/26/19	AQ	Surface H2O Filtered	PR-1S
JC90655-1XA	06/26/19	11:45 GW	06/26/19	AQ	Surface Water	PR-1S
JC90655-2F	06/26/19	13:00 GW	06/26/19	AQ	Surface H2O Filtered	PR-2S
JC90655-2XA	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2S
JC90655-3F	06/26/19	13:00 GW	06/26/19	AQ	Surface H2O Filtered	PR-2M
JC90655-3XA	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2M
JC90655-4F	06/26/19	13:00 GW	06/26/19	AQ	Surface H2O Filtered	PR-2D
JC90655-4XA	06/26/19	13:00 GW	06/26/19	AQ	Surface Water	PR-2D
JC90655-5F	06/26/19	12:30 GW	06/26/19	AQ	Surface H2O Filtered	PR-3S
JC90655-5XA	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3S
JC90655-6F	06/26/19	12:30 GW	06/26/19	AQ	Surface H2O Filtered	PR-3M
JC90655-6XA	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3M
JC90655-7F	06/26/19	12:30 GW	06/26/19	AQ	Surface H2O Filtered	PR-3D



Sample Summary (continued)

USACE-Philadelphia District

Job No: JC90655XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC90655-7XA	06/26/19	12:30 GW	06/26/19	AQ	Surface Water	PR-3D
JC90655-8F	06/26/19	11:00 GW	06/26/19	AQ	Surface H2O Filtered	PR-4S
JC90655-8XA	06/26/19	11:00 GW	06/26/19	AQ	Surface Water	R-4S



Dayton, NJ

Section 2

Subcontract Lab Data	
Report of Analysis	



Certificate of Analysis

Laboratory No.: 9022357 **Report:** 07/03/19

Lab Contact: Richard A Wheeler

Attention: Tammy McCloskey

Reported To: SGS North America

2235 US Highway 130 Dayton, NJ 08810 **Project:** Army Corp Reservoirs

JC906655XA

Lab ID: 9022357-01 **Collected By:** Client **Sampled:** 06/26/19 11:45 **Received:** 06/28/19 09:20

Sample Desc: PR-1S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	06/28/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.03	mg/l	0.01	0.01	SM 4500-P E	06/28/19		JCL

Lab ID: 9022357-02 **Collected By:** Client **Sampled:** 06/26/19 13:00 **Received:** 06/28/19 09:20

Sample Desc: PR-2S Sample Type: Grab

Rep. Unit MDL Limit Result Procedure Notes Analyzed Analyst Dissolved General Chemistry Phosphorus as P, 0.02 0.007 0.05 SM 4500-P E 07/01/19 G-11, J ICL mg/l Dissolved General Chemistry JCL Phosphorus as P, Total 0.02 0.01 SM 4500-P E 07/01/19 mg/l 0.01

Lab ID: 9022357-03 **Collected By:** Client **Sampled:** 06/26/19 13:00 **Received:** 06/28/19 09:20

Sample Desc: PR-2M Sample Type: Grab

Rep. MDL Result Unit Limit Procedure Analyzed Notes Analyst Dissolved General Chemistry Phosphorus as P, 0.01 0.007 0.05 SM 4500-P E 07/01/19 G-11, J JCL mg/l Dissolved General Chemistry Phosphorus as P, Total 0.02 0.01 0.01 SM 4500-P E 07/01/19 JCL mg/l



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Page 1 of 10



Lab ID: 9022357-04 **Collected By:** Client **Sampled:** 06/26/19 13:00 **Received:** 06/28/19 09:20

Sample Desc: PR-2D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	t r y								
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/01/19	G-11, J	JCL	
General Chemistry									
Phosphorus as P, Total	0.06	mg/l	0.01	0.01	SM 4500-P E	07/01/19		JCL	

Lab ID: 9022357-05 **Collected By:** Client **Sampled:** 06/26/19 12:30 **Received:** 06/28/19 09:20

Sample Desc: PR-3S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/01/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/01/19		JCL

Lab ID: 9022357-06 **Collected By:** Client **Sampled:** 06/26/19 12:30 **Received:** 06/28/19 09:20

Sample Desc: PR-3M Sample Type: Grab

				Rep.					
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/01/19	G-11, J	JCL	
General Chemistry									
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/01/19		JCL	

Lab ID: 9022357-07 **Collected By:** Client **Sampled:** 06/26/19 12:30 **Received:** 06/28/19 09:20

Sample Desc: PR-3D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.01	mg/l	0.007	0.05	SM 4500-P E	07/01/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.05	mg/l	0.01	0.01	SM 4500-P E	07/01/19		JCL



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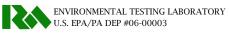
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Page 2 of 10



Lab ID: 9022357-08 **Collected By:** Client **Sampled:** 06/26/19 11:00 **Received:** 06/28/19 09:20

Sample Desc: PR-4S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/01/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/01/19		JCL



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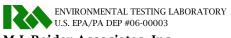
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Page 3 of 10





Quality Control

General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9F1624				,				
MB (B9F1624-BLK1)				Prepared & An	alyzed: 06/28/20	19		
Phosphorus as P, Total	< 0.01	0.01	mg/l					U
MB (B9F1624-BLK2)				Prepared & An	alyzed: 06/28/20	19		
Phosphorus as P, Total	< 0.01	0.01	mg/l					U
LFB (B9F1624-BS1)				Prepared & An	alyzed: 06/28/20	19		
Phosphorus as P, Total	1.01	0.01	mg/l	101	80-120			
Batch B9G0032								
MB (B9G0032-BLK1)				Prepared & An	alyzed: 07/01/20	19		
Phosphorus as P, Total	< 0.01	0.01	mg/l					U
MB (B9G0032-BLK2)				Prepared & An	alyzed: 07/01/20	19		
Phosphorus as P, Total	< 0.01	0.01	mg/l					U
LFB (B9G0032-BS1)				Prepared & An	alyzed: 07/01/20	19		
Phosphorus as P, Total	1.02	0.01	mg/l	102	80-120			
LFM (B9G0032-MS1)		Source: 9022357-08	3	Prepared & An	alyzed: 07/01/20	19		
Phosphorus as P, Total	1.02	0.01	mg/l	99.4	80-120			
LFMD (B9G0032-MSD1)		Source: 9022357-08	3	Prepared & An	alyzed: 07/01/20	19		
Phosphorus as P, Total	1.02	0.01	mg/l	99.8	80-120	0.393	20	

Dissolved General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9F1625								
MB (B9F1625-BLK1)				Prepared & Ana	alyzed: 06/28/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
LFB (B9F1625-BS1)				Prepared & Ana	alyzed: 06/28/20	19		
Phosphorus as P, Dissolved	1.02	0.05	mg/l		80-120			G-11
Batch B9G0037								
MB (B9G0037-BLK1)				Prepared & Ana	alyzed: 07/01/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
LFB (B9G0037-BS1)				Prepared & Ana	alyzed: 07/01/20	19		
Phosphorus as P, Dissolved	1.01	0.05	mg/l		80-120			G-11



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Page 4 of 10



Preparation Methods

Specific Method	Preparation Method	Prepared Date	Prepared By
9022357-01			
SM 4500-P E	SM 4500-P B	06/28/2019	JCL
9022357-02			
SM 4500-P E	SM 4500-P B	07/01/2019	JCL
9022357-03			
SM 4500-P E	SM 4500-P B	07/01/2019	JCL
9022357-04			
SM 4500-P \to	SM 4500-P B	07/01/2019	JCL
9022357-05			
SM 4500-P E	SM 4500-P B	07/01/2019	JCL
9022357-06			
SM 4500-P E	SM 4500-P B	07/01/2019	JCL
9022357-07			
SM 4500-P E	SM 4500-P B	07/01/2019	JCL
9022357-08			
SM 4500-P E	SM 4500-P B	07/01/2019	JCL

Notes and Definitions

G-11 The sample was filtered after it was received at the laboratory.

J Estimated value

U Analyte was not detected above the indicated value.



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Page 5 of 10



Page 6 of 10

DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SI.- Sludge SED-Sediment OD-Ober Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB-Equipment Blank TB - Rines Blank TB - Trip Blank LAB USE ONLY http://www.sgs.com/en/terms-and-conditions 0 155 10-205 100 FILTERCEN = MJ Reider to filter prior to TPO4 analysis on samples noted per client instructions. (Each sample should be TPO4 total and TPO4 lab filtered). 10% Cooler Temp. 'C Page 1 of 2 JC90655XA Comments / Special Instructions Bottle Order Control # Received By: SGS Job# Requested Analysis Preserved where applicable Date / Time: Date / Time: Commercial '9' = Results + QC Summay
Commercial 'C' = Results + QC Summary + Partial Raw data
mented below each time samples change possession, including courier delivery. FED-EX Tracking # 17.77 , 409T 8GS Quote # Intact Not Intact ny NYASP Category A
NYASP Category B
State Forms
EDD Format
X Other REDT2 , точт, педег, × Feder MEOH DI Water NONE
HS2O*
HNO2
HNO2
HCI
HCI
HCI
0 Billing Information (if different from Report to) Company Name Commercial "A" = Results Only Relinquished By: Relinguished By: Custody Seal # CHAIN OF CUSTODY SGS North America Inc. - Dayton 2235 Route 130, Dayton, NJ 08810 TEL. 732-329-0200 FAX: 732-329-348933480 Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C" Philadelphia District, Reservoir Sampling www.sgs.com/ehsusa Matrix A A ğ AQ ğ Aa Ag Ā AQ AQ Å Project Information breet Address 11:45:00 AM GW 11:45:00 AM GW δV ΘM 1:00:00 PM GW 1:00:00 PM GW βM βM 12:30:00 PM GW δW 12:30:00 PM GW 12:30:00 PM GW 1:00:00 PM Emergency & Rueh T/A data available via Lablink. Approval needed for RUSH/Emergency TAT
Sample Custody must be doe
Sample Custody must be doe 12:30:00 PM 1:00:00 PM 1:00:00 PM 1:00:00 PM State Time 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 6/26/19 5/27/9 (7-0) Date Received By: Approved By (SGS PM): / Date: Client Purchase Order Project Manager MEOH/DI Vial # Project Name: Date / Time; Field ID / Point of Collection | Standard 10 Business Days
| 6 Business Days RUSH
| 3 Business Days RUSH
| 2 Business Days RUSH
| 1 Business Days RUSH
| 3 Business Days RUSH
| 3 Business Days RUSH
| 4 Business Days RUSH
| 5 Business Days RUSH
| 6 Business Days RUSH
| 7 Business Days RUSH
| 8 Business Days RUSH
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Page 7 of 10

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Page 8 of 10

Asseral

Date / Time: 6/27/2019 1:14:19 PM

CSR: TAMMY Job#: JC90655XA

Client Project: Philadelphia District, Reservoir Sampling

Deliverable: REDT2

TAT: Due 7/10/2019

Sub Lab: MJ Reider Associates Inc, Env. Testing Laboratories Address: 107 Angelica Street

City: Reading

State: PA

Zip: 19611 Contact: Sample Receiving / Rich Wheeler

Phone: 610-374-5129

		•		Sampled	Date	Time	
Sample Description Analysis	Analysis		Location	By	Sampled	Sampled	Aliquot
PR-1S TP04.	TPO4.			<u>GW</u>	6/26/2019	11:45:00 AM	
PR-18 FILTERGN, TPO4.	FILTERGN,TPO4,			<u>R</u>	6/26/2019	11:45:00 AM	
PR-2 <u>S</u> IPO4.	IPO4.			<u>GW</u>	6/26/2019	1:00:00 PM	
PR-2S FILTERGN, TPO4.	FILTERGN, TPO4,			<u>GW</u>	6/26/2019	1:00:00 PM	
PR-2M IPO4.	TPO4.			<u>R</u>	6/26/2019	1:00:00 PM	
PR-2M FILTERGN, TPO4.	FILTERGN, TPO4,			<u>GW</u>	6/26/2019	1:00:00 PM	
PR-2D IPO4.	IPO4.			<u>GW</u>	6/26/2019	1:00:00 PM	
PR-2D FILTERGN, TPO4.	FILTERGN, TPO4,			<u>GW</u>	6/26/2019	1:00:00 PM	
PR-3S TPO4.	TPO4.			<u>GW</u>	6/26/2019	12:30:00 PM	
PR-3S FILTERGN, TPO4.	FILTERGN, TPO4.			<u>R</u>	6/26/2019	12:30:00 PM	
PR-3M IPO4.	IPO4.			<u>GW</u>	6/26/2019	12:30:00 PM	
PR-3M FILTERGN, TPO4,	FILTERGN, TPO4,			GW	6/26/2019	12:30:00 PM	
PR-3D IPO4,	IPO4,			<u>GW</u>	6/26/2019	12:30:00 PM	
PR-3D FILTERGN, TPO4,	FILTERGN, TPO4.			<u>GW</u>	6/26/2019	12:30:00 PM	
PR-4S IPO4,	IPO4.			GW	6/26/2019	11:00:00 AM	
PR-4S FILTERGN, TPO4.	FILTERGN, TPO4.			<u>GW</u>	6/26/2019	11:00:00 AM	

Comments: FILTERGEN = MJ Reider to filter prior to TPO4 analysis on samples noted per client instructions. (Each sample should be TPO4 total and

Sample Management Receipt:

Date:

MJRA Terms & Conditions

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

Sample Submission, Sample Acceptance & Sampling Containers

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

Turnaround Times (TAT)

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. *RUSH TAT Surcharges are applied for expedited turnaround times.

Analytical Results, Sample Collection Integrity & Subcontracting

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

Payment Terms

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

Warranty & Litigation

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:

Richard A Wheeler Director of Field Services



107 Angelica Street O Reading, PA 19611 O www.mjreider.com (610) 374-5129 O fax (610) 374-7234

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NELAP accredited by PA. (PADEP #06-00003) Visit our website to view our current

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

Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 10 of 10





Dayton, NJ

Misc. Forms **Custody Documents and Other Forms**

Includes the following where applicable:

• Chain of Custody

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JC90655XA: Chain of Custody Page 1 of 2

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SGS Sample Receipt Summary

Job Number:	JC9065	5	с	lient:	USACE-PI	HILAD	ELPHIA	DISTRICT	Project: PHILADELPHIA	DISTRICT	, RESERVO	OIR SAMPL
Date / Time Received:	6/26/20	19 7:	16:00 PM	<u> </u>	Delivery I	/letho	d:		Airbill #'s:			
Cooler Temps (Raw Mea	,			` '	•	` ''		· //				
Cooler Security 1. Custody Seals Present: 2. Custody Seals Intact: Cooler Temperature	Y 0 ✓] 3. (Present: es/Time OK	<u>Y</u> ✓	or N	Sample labels Container lab	ity - Documentation s present on bottles: eling complete: niner label / COC agree:	Y 	or N	
Temp criteria achieved: Cooler temp verification Cooler media: No. Coolers:			IR Gun ce (Bag)					Sample Integral 1. Sample record 2. All containers 3. Condition of s	accounted for:	Y ✓ ✓	or N	
Quality Control Present 1. Trip Blank present / coc 2. Trip Blank listed on COc 3. Samples preserved pro 4. VOCs headspace free:	oler: C: perly:	Y	or N	N/A	4			Analysis requ Bottles recei Sufficient vol	rity - Instructions uested is clear: ved for unspecified tests ume recvd for analysis: instructions clear:	Y	or N	N/A ✓
Test Strip Lot #s:	pH 1-	12: _	229	9517		ŗ	оН 12+: _	5. Filtering instr	ructions clear: Other: (Specify)			∨
Comments												

SM089-03 Rev. Date 12/7/17

JC90655XA: Chain of Custody

Page 2 of 2



Dayton, NJ 08/20/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC91795

Sampling Date: 07/17/19



Army Corps of Engineers

joseph.m.loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 21

TNI FORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499

SGS

Sections:

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	
Section 4: Sample Results	10
4.1: JC91795-1: PR-1S	11
4.2: JC91795-2: PR-2S	12
4.3: JC91795-3: PR-2M	13
4.4: JC91795-4: PR-2D	14
4.5: JC91795-5: PR-3S	15
4.6: JC91795-6: PR-3M	16
4.7: JC91795-7: PR-3D	17
4.8: JC91795-8: PR-4S	18
Section 5: Misc. Forms	19
5.1: Chain of Custody	20



Sample Summary

USACE-Philadelphia District

Job No:

JC91795

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC91795-1	07/17/19	12:10 GW	07/17/19	AQ	Surface Water	PR-1S
JC91795-2	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2S
JC91795-3	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2M
JC91795-4	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2D
JC91795-5	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3S
JC91795-6	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3M
JC91795-7	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3D
JC91795-8	07/17/19	11:45 GW	07/17/19	AQ	Surface Water	PR-4S

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District Job No JC91795

Site: Philadelphia District, Reservoir Sampling Report Date 7/26/2019 10:39:21 A

On 07/17/2019, 8 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.1 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC91795 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ Batch ID: GP22539

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91893-1DUP, JC91893-1MS were used as the QC samples for Nitrogen, Total Kjeldahl.
- Matrix Spike Recovery(s) for Nitrogen, Total Kjeldahl are outside control limits. Spike recovery indicates possible matrix interference.

Matrix: AQ Batch ID: GP22570

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91795-8DUP, JC91795-8MS were used as the QC samples for Nitrogen, Total Kjeldahl.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ Batch ID: GP22548

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91921-1DUP, JC91921-1MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

Friday, July 26, 2019 Page 1 of 4

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ Batch ID: R179939

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179940

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179941

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-3 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179942

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179943

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179944

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-6 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179945

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-7 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R179946

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC91795-8 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

General Chemistry By Method SM2320 B-11

Matrix: AQ Batch ID: GN97809

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91790-2DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC91795-1 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-2 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-8 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-7 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-6 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-5 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC91795-3 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

Friday, July 26, 2019 Page 2 of 4

SGS

General Chemistry By Method SM2540 C-11

Matrix: AQ Batch ID: GN97675

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91795-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM2540 D-11

Matrix: AQ Batch ID: GN97828

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91795-1DUP were used as the QC samples for Solids, Total Suspended.
- JC91795-7 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 150 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ Batch ID: GP22601

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92091-1DUP, JC92091-1MS, JC92091-1MSD were used as the QC samples for Nitrogen, Ammonia.
- Matrix Spike Recovery(s) for Nitrogen, Ammonia are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

General Chemistry By Method SM4500NO2 B-11

Matrix: AQ Batch ID: GN97713

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91885-1DUP, JC91885-1MS were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AQ Batch ID: GP22476

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91795-1DUP were used as the QC samples for BOD, 5 Day.

General Chemistry By Method SM5310 B-11

Matrix: AQ Batch ID: GP22478

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC91795-1MS, JC91795-1MSD were used as the QC samples for Total Organic Carbon.

Friday, July 26, 2019 Page 3 of 4

SGS

6 of 21

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Friday, July 26, 2019 Page 4 of 4

Summary of Hits Job Number: JC91795

Account: USACE-Philadelphia District

Philadelphia District, Reservoir Sampling 07/17/19 **Project:**

Collected:

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC91795-1	PR-1S					
Alkalinity, Total Nitrogen, Nitrate Nitrogen, Nitrate Nitrogen, Total I Solids, Total Dis	y b e + Nitrite Kjeldahl solved	55.0 0.21 0.21 0.22 42.0	5.0 0.11 0.10 0.20 10		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA353.2/SM4500NO2B EPA 353.2/LACHAT EPA 351.2/LACHAT SM2540 C-11
Solids, Total Sus Total Organic Ca		18.4 2.0	4.0 1.0		mg/l mg/l	SM2540 D-11 SM5310 B-11
JC91795-2	PR-2S					
Alkalinity, Total Nitrogen, Nitrate Nitrogen, Nitrate Nitrogen, Total I Solids, Total Dis Solids, Total Sus Total Organic Ca	, b e + Nitrite Kjeldahl solved pended	30.0 0.48 0.48 0.55 47.0 7.4 3.8	5.0 0.11 0.10 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA353.2/SM4500NO2B EPA 353.2/LACHAT EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC91795-3	PR-2M					
Alkalinity, Total Nitrogen, Total I Solids, Total Dis Solids, Total Sus Total Organic Ca	Kjeldahl solved pended	29.5 0.43 39.0 4.0 3.3	10 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC91795-4	PR-2D					
Alkalinity, Total Nitrogen, Ammo Nitrogen, Total I Solids, Total Dis Solids, Total Sus Total Organic Ca	nia Kjeldahl solved pended	33.0 0.21 0.63 39.0 6.7 2.5	5.0 0.20 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM4500NH3 H-11LACHAT EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC91795-5	PR-3S					
Alkalinity, Total Nitrogen, Total I Solids, Total Dis Total Organic Ca	Kjeldahl solved	35.0 0.51 49.0 3.4	5.0 0.20 10 1.0		mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11

Summary of Hits Job Number: JC91795

Account: USACE-Philadelphia District

Project: Philadelphia District, Reservoir Sampling

Collected: 07/17/19

					1
Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
JC91795-6 PR-3M					
Alkalinity, Total as CaCO3 ^a	25.0	10		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl	0.36	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	46.0	10		mg/l	SM2540 C-11
Total Organic Carbon	3.0	1.0		mg/l	SM5310 B-11
JC91795-7 PR-3D					
Alkalinity, Total as CaCO3 ^a	31.0	10		mg/l	SM2320 B-11
BOD, 5 Day	5.3	3.4		mg/l	SM5210 B-11
Nitrogen, Ammonia	1.2	0.20		mg/l	SM4500NH3 H-11LACHAT
Nitrogen, Total Kjeldahl	1.7	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	56.0	10		mg/l	SM2540 C-11
Solids, Total Suspended ^c	17.3	4.0		mg/l	SM2540 D-11
Total Organic Carbon	5.4	1.0		mg/l	SM5310 B-11
JC91795-8 PR-4S					
Alkalinity, Total as CaCO3 ^a	30.0	5.0		mg/l	SM2320 B-11
Nitrogen, Nitrate b	0.15	0.11		mg/l	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.16	0.10		mg/l	EPA 353.2/LACHAT
Nitrogen, Total Kjeldahl	0.37	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	42.0	10		mg/l	SM2540 C-11
Solids, Total Suspended	43.8	4.0		mg/l	SM2540 D-11
Total Organic Carbon	3.0	1.0		mg/l	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 150 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.



Dayton, NJ

Section 4

Report of Analysis

Client Sample ID: PR-1S Lab Sample ID: JC91795-1

Matrix: AQ - Surface Water

 Date Sampled:
 07/17/19

 Date Received:
 07/17/19

 Percent Solids:
 n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	55.0	5.0	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	07/18/19 21:52		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/25/19 14:49	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	0.21	0.11	mg/l	1	07/23/19 11:43	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.21	0.10	mg/l	1	07/23/19 11:43	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:41	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.22	0.20	mg/l	1	07/23/19 13:04	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	42.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	18.4	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	2.0	1.0	mg/l	1	07/19/19 14:08	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-2S Lab Sample ID: JC91795-2

Date Sampled: 07/17/19 Matrix: AQ - Surface Water **Date Received:** 07/17/19

Project: Philadelphia District, Reservoir Sampling

Percent Solids: n/a

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	30.0	5.0	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 4.4	4.4	mg/l	1	07/18/19 21:55		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/25/19 14:50	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	0.48	0.11	mg/l	1	07/23/19 11:44	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.48	0.10	mg/l	1	07/23/19 11:44	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:41	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.55	0.20	mg/l	1	07/23/19 13:05	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	47.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	7.4	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	3.8	1.0	mg/l	1	07/19/19 15:43	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-2M

Lab Sample ID: JC91795-3

Matrix: AQ - Surface Water

Date Sampled: 07/17/19

Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	29.5	10	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 4.4	4.4	mg/l	1	07/18/19 22:00		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/25/19 14:52	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/23/19 11:45	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/23/19 11:45	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:41	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.43	0.20	mg/l	1	07/23/19 13:06	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	39.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	4.0	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	3.3	1.0	mg/l	1	07/19/19 16:08	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Client Sample ID: PR-2D

Lab Sample ID: JC91795-4 **Date Sampled:** 07/17/19 Matrix: **Date Received:** 07/17/19 AQ - Surface Water Percent Solids: n/a

Report of Analysis

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	33.0	5.0	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	07/18/19 22:03	EB	SM5210 B-11
Nitrogen, Ammonia	0.21	0.20	mg/l	1	07/25/19 14:53	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^b	< 0.11	0.11	mg/l	1	07/23/19 11:46	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/23/19 11:46	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:41	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.63	0.20	mg/l	1	07/23/19 13:08	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	39.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	6.7	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	2.5	1.0	mg/l	1	07/19/19 16:19	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-3S Lab Sample ID: JC91795-5

Date Sampled: 07/17/19 Matrix: AQ - Surface Water **Date Received:** 07/17/19 Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	35.0	5.0	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	07/18/19 22:06	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/25/19 14:54	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/23/19 11:50	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/23/19 11:50	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:56	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.51	0.20	mg/l	1	07/23/19 13:09	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	49.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	3.4	1.0	mg/l	1	07/19/19 16:30	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Date Sampled: 07/17/19

Report of Analysis

Client Sample ID: PR-3M Lab Sample ID: JC91795-6

Matrix: AQ - Surface Water **Date Received:** 07/17/19 Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	25.0	10	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	07/18/19 22:10	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/25/19 14:56	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/23/19 11:51	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/23/19 11:51	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:56	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.36	0.20	mg/l	1	07/23/19 13:10	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	46.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	3.0	1.0	mg/l	1	07/19/19 16:41	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-3D Lab Sample ID: JC91795-7

Lab Sample ID:JC91795-7Date Sampled:07/17/19Matrix:AQ - Surface WaterDate Received:07/17/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	31.0	10	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	5.3	3.4	mg/l	1	07/18/19 22:15		SM5210 B-11
Nitrogen, Ammonia	1.2	0.20	mg/l	1	07/25/19 14:57	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	07/23/19 11:52	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	07/23/19 11:52	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:56	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.7	0.20	mg/l	1	07/23/19 13:11	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	56.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended ^c	17.3	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	5.4	1.0	mg/l	1	07/19/19 16:53	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 150 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-4S

Lab Sample ID: JC91795-8

Matrix: AQ - Surface Water

Date Sam

Date Sam

Date Rec

Project: Philadelphia District, Reservoir Sampling

Date Sampled: 07/17/19 **Date Received:** 07/17/19

Percent Solids: n/a

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	30.0	5.0	mg/l	1	07/22/19 16:38	CM	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	07/18/19 22:18	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	07/25/19 14:59	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^b	0.15	0.11	mg/l	1	07/23/19 11:53	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.16	0.10	mg/l	1	07/23/19 11:53	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	07/18/19 22:56	EB	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.37	0.20	mg/l	1	07/25/19 11:23	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	42.0	10	mg/l	1	07/18/19 16:00	RC	SM2540 C-11
Solids, Total Suspended	43.8	4.0	mg/l	1	07/23/19 10:23	RC	SM2540 D-11
Total Organic Carbon	3.0	1.0	mg/l	1	07/19/19 17:04	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)



Misc. Forms

Dayton, NJ

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

ccc		AIN OF CUSTODY	Page <u></u> of <u></u>
353		GS North America Inc Dayton 2235 Route 130, Dayton, NJ 08810	FED-EX Tracking # Buttle Order Control is
		732-329-0200 FAX: 732-329-3499/3480	SGS Quote 9 SGS Job # 7 (91795
Client / Reporting Information	Project	www.sgs.com/ehsusa ct Information	Requested Analysis Metrix Codes
Company Name:	Project Name:		Requested Analysis Matrix Codes
USACE - Phila . District	USACE Resen	voires - Prompton	By Ground Water GW - Ground Water GW - Water GW - Water GW - Water GW - Water
100 Penn So East	City State	Billing information (if different from Report to)	SW - Surface Water SO - Set Su- Studge
Phila PA 19107	Prompte N PA	Straet Address	O E I X
Joe Loeper			\ \ \ AIR-AIr
215-656-6545	Client Purchase Order 1	City State Zip	SOL-Other Solid
Sampler(s) Name(s) (910 Phone #	Project Manager	Attention:	S EB-Equipment Blank RB - Rimse Blank
Greg Wacik 597-9780	Tammy MCClosky	n Number of criserves Borton	TB-Trip Blank
sas 8ample = Field ID / Point of Collection	MEOH/DI Viol # Doze Time	Stempled Grap (G) Matrix bouston	WP - Wipe FB - Fled Blank EB-Equipment Blank RB - Rivas Blank TB - Trip Blank LAS USE ONLY LAS USE ONLY
IF PR-15 (+Spende)	7/17/19/12/0		
2F PR. as	1320	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 	
3F PR-am			× x × x
ME PR. aD	1320		\times \times \times \times (917)
	1320	1 1 1 2 1 2 2 1 2 1 2 1 1 1 1 1 1 1 1	XXXX SUB
SF PR.35	1250	1 G SA 9 X X	X X X X
6F PR.3m	1250	1 G SW 9 X X	x x x x
7F PR. 3D	1250		x x x x
SP PR. 45 (*See Note)	1145	V G SW 9 x X	\times \times \times \times
			74(1)
			INITIAL ASESSMENT CT CT
			LABEL VERIFICATION
Turn Around Time (Bus	siness Days)	Deliverable	Comments / Special Instructions
10 Businoss Days	Approved By (SG8 PM): / Date:	Commercial "A" (Level 1) NYASP Category A	DOD-QSM5 TOCK/FOR Samples TO
5 Business Days	The second secon	Commercial "B" (Level 2) NYASP Category B NJ Roduced (Level 3) MA MCP Criteria	Eurofin lab. * Reversed in the state of the
3 Business Days*	CONTRACTOR OF THE PROPERTY OF THE PARTY OF T	Full Tier! (Level 4) CT RCP Criteria	- Eurofin Lab. X Rev chai
2 Business Days*	CANADA CONTRACTOR CONT	Commercial "C" Stato Forms	hold it is
1 Business Day*	AMARIAN AND AND AND AND AND AND AND AND AND A	NJ DKQP EDD Format	Thou samples in marker
	ovel needed for 1-3 Business Day TAT	Commercial "A" = Results only; Commercial "B" = Result Commercial "C" = Results + QC Summary + Partial Rs	s+dc summery 1/12 Net Out 1000 5104 100
	Sample Custody m	nust be documented below each time samples shange possession. Mich	uding courier delivery.
Religible by: Dated Time	9 15401	Scotlingularedi By:	Date / Time: Received By: 2 School
Ratinquished by: Data / Time	: Received by	Rollingstated By:	Date / Time: Received By:
Refinquished by: Date / Time	: Received By:	Custody Soel #	Naci Preservod whore applicable On ice Cooler Tomps_4C2
[5]	5	O N	lot unitred Absent Trime ID:
			2 COCET PRICEPO COMILA

JC91795: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number: JC91	795 Client:	USACE-PHILADELPHIA DIS	TRICT Project: PHILADELPHIA DI	STRICT, RESERVOIR SAMPL
Date / Time Received: 7/17/2	2019 7:38:00 PM	Delivery Method:	Airbill #'s:	
			9); Cooler 4: (3.1); Cooler 5: (2.7); Cooler 6: (2.9); Cooler 4: (3.1); Cooler 5: (2.7); Cooler 6: (2.7);	
Cooler Security Y 1. Custody Seals Present: ✓ 2. Custody Seals Intact: ✓	or N 3. COC P		Sample Integrity - Documentation 1. Sample labels present on bottles: 2. Container labeling complete:	<u>Y or N</u> ☑ □ ☑ □
Cooler Temperature 1. Temp criteria achieved: 2. Cooler temp verification: 3. Cooler media: 4. No. Coolers: Quality Control Preservation 1. Trip Blank present / cooler: 2. Trip Blank listed on COC: 3. Samples preserved properly: 4. VOCs headspace free:	Y or N IR Gun Ice (Bag) 7 Y or N N/A		3. Sample container label / COC agree: Sample Integrity - Condition 1. Sample recvd within HT: 2. All containers accounted for: 3. Condition of sample: Sample Integrity - Instructions 1. Analysis requested is clear: 2. Bottles received for unspecified tests 3. Sufficient volume recvd for analysis: 4. Compositing instructions clear:	Y or N Intact Y or N N/A Y or N N/A Y O
Test Strip Lot #s: pH	1-12:229517	pH 12+:	5. Filtering instructions clear: 208717 Other: (Specify)	
Comments SM089-03				

Rev. Date 12/7/17

JC91795: Chain of Custody Page 2 of 2



Dayton, NJ 08/01/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC91795X

Sampling Date: 07/17/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 15

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 Please share your ideas about

Sections:

-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	
Section 3: Misc. Forms	13
3.1: Chain of Custody	14





Sample Summary

USACE-Philadelphia District

Job No: JC91795X

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC91795-1X	07/17/19	12:10 GW	07/17/19	AQ	Surface Water	PR-1S
JC91795-2X	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2S
JC91795-5X	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3S
JC91795-8X	07/17/19	11:45 GW	07/17/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data	
Report of Analysis	

Analytical Report

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130

DAYTON,NJ 08810

Regarding:

SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

PROJECT ID:

W09769 USACE

LABORATORY REPORT NUMBER:

L7146700

Authorized by: Douglas J. Gump Client Services Manager

D21/1/



Analytical Report Printed 07/29/19 12:23 QC36

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

Regarding: KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

	: W09769, SGS NORTH W09769 USACE,	AMERICA, INC		P.O. No:		Inv. No: PWSID No:	PI
Sample ID L7146700-1	Sample Description WA-1S Received Date/Tin	n e/Temp 07/17	7/19 05:40pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 09:40am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	MENTAL MICROBIOL	OGY WA-1	S				
Total Coliform Fecal Coliforn	,	11300 E, Q 3 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 07:38PM KC2 07/17/19 07:44PM JG2
Sample ID L7146700-2	Sample Description WA-2S Received Date/Tin	ne/Temp 07/17	7/19 05:40pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 07:10am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	MENTAL MICROBIOL	OGY WA-2	S				
Total Coliform Fecal Coliforr		15300 E, Q 2 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 07:38PM KC2 07/17/19 07:44PM JG2

Page 2 of 8

Analytical Report Printed 07/29/19 12:23

	: W09769, SGS NORTH W09769 USACE,	AMERICA, INC.		P.O. No:		Inv. No: PWSID No:	PI
Sample ID L7146700-3	Sample Description WA-3S Received Date/Tim	ne/Temp 07/17/	19 05:40pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 10:30am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	IENTAL MICROBIOL	OGY WA-3S					
Total Coliform Fecal Coliforn		>20000 Q 23 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 07:38PM KC2 07/17/19 07:44PM JG2
Sample ID L7146700-4	Sample Description WA-4S Received Date/Tim	ne/Temp 07/17/	19 05:40pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 10:15am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	IENTAL MICROBIOL	OGY WA-4S					
Total Coliform Fecal Coliforn	,	>20000 Q 70 E, Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 10	100 10	07/17/19 07:38PM KC2 07/17/19 07:44PM JG2
Sample ID L7146700-5	Sample Description WA-5S Received Date/Tim	ne/Temp 07/17/	19 05:40pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 10:00am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	IENTAL MICROBIOL	OGY WA-5S					
Total Coliform Fecal Coliforn	,	8300 E, Q 10 E, Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 10	100 10	07/17/19 09:00PM KC2 07/17/19 07:44PM JG2
Sample ID L7146700-6	Sample Description WA-6S Received Date/Tim	ne/Temp 07/17/	19 05:40pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 08:00am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst

Page 3 of 8

Analytical Report Printed 07/29/19 12:23

	V09769, SGS NORTH A V09769 USACE,	AMERICA, INC.			P.O. No:		Inv. No: PWSID No:	PI
	Sample Description VA-6S Received Date/Time	e /Temp 07/17/	19 05:40	0pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 08:00am NA C	Sampled by Customer
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONME	ENTAL MICROBIOLO	OGY WA-6S						
Total Coliform, Fecal Coliform,		7700 Q 1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 09:00PM KC2 07/17/19 07:44PM JG2
	Sample Description NA-7S Received Date/Time	e /Temp 07/17/	19 05:40	0pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 08:30am NA C	Sampled by Customer
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONME	ENTAL MICROBIOLO	OGY WA-7S						
Total Coliform, I Fecal Coliform,		>20000 Q 1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 09:00PM KC2 07/17/19 07:44PM JG2
	Sample Description PR-1S Received Date/Time	e /Temp 07/17/	19 05:40	0pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 2:10pm NA C	Sampled by Customer
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONME	ENTAL MICROBIOLO	OGY PR-1S						
Total Coliform, Fecal Coliform,		16500 E, Q 60 E, Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 10	100 10	07/17/19 07:38PM KC2 07/17/19 07:44PM JG2
	Sample Description PR-2S Received Date/Time	e/Temp 07/17/	19 05:40	0pm 3.4 C	Iced (Y/N): Y		ate/Time/Temp 11:20pm NA C	Sampled by Customer

Page 4 of 8

Analytical Report Printed 07/29/19 12:23

	N09769, SGS NORTH N09769 USACE,	AMERICA, INC.			P.O. No:		Inv. No: PWSID No:	PI
	Sample Description PR-2S Received Date/Tim	e/Temp 07/17/1	9 05:40	pm 3.4 C	Iced (Y/N): Y		te/Time/Temp 1:20pm NA C	Sampled by Customer
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONME	ENTAL MICROBIOL	OGY PR-2S						
Total Coliform, I Fecal Coliform,		4300 Q 1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 09:00PM KC2 07/17/19 07:44PM JG2
Sample ID S L7146700-10 F	Sample Description PR-3S Received Date/Tim	e/Temp 07/17/1	9 05:40	pm 3.4 C	Iced (Y/N): Y		te/Time/Temp 2:50pm NA C	Sampled by Customer
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONME	ENTAL MICROBIOL	OGY PR-3S						
Total Coliform, I Fecal Coliform,		1964 E, Q <1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/17/19 09:00PM KC2 07/17/19 07:44PM JG2
Sample ID S L7146700-11 F	Sample Description PR-4S Received Date/Tim	e/Temp 07/17/1	9 05:40	pm 3.4 C	Iced (Y/N): Y		te/Time/Temp 1:45am NA C	Sampled by Customer
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONME	ENTAL MICROBIOL	OGY PR-4S						
Total Coliform, I Fecal Coliform,		>20000 Q 9 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	07/17/19 09:00PM KC2 07/17/19 07:44PM JG2

Sample Comments | Result Qualifiers:

L7146700-1:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

Page 5 of 8

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

Analytical Report

Account No: W09769, SGS NORTH AMERICA, INC. ы P.O. No: Inv. No: Project No: W09769 USACE, PWSID No:

L7146700-2:

- E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.
- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-3:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-4:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory
- E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

I 7146700-5 ·

- E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.
- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-6:

- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.
- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7146700-7:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory

Page 6 of 8

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-8:

Analytical Report

Account No: W09769, SGS NORTH AMERICA, INC. ы P.O. No: Inv. No: Project No: W09769 USACE, PWSID No:

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-9:

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-10:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7146700-11:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory

Page 7 of 8

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.





DEFINITIONS

The following terms or abbreviations are used in this report:

Eurofins QC, LLC (EQC)

<	Less than: In conjunction with a numerical value,
_ `	indicates a concentration less than RL / MDL
	Greater than: In conjunction with a numerical value,
>	indicates a concentration greater than RL / MDL
CFU	Colony Forming Unit
DF	Dilution Factor (For Microbiology, DF = volume of
DF	sample tested)
DRY	Result was reported on a dry weight basis
MCL	EPA recommended "Maximum Contaminant Level"
MDL	Method Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
ND	For odor test: No Odor Observed
ND	For all other tests: Analyte concentration Not
ND	Detected greater than the RL / MDL

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB (µg/L)	Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
PPM (mg/L)	Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation (LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Data Qualifiers

J	Estimated value ≥ MDL, but < RL
Т	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
Ε	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- · All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been
 performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for
 testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly)
 to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing
 results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Jordan Thorngren (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ:	PA093	NY:	12080	MD: 357
East Rutherford Facility Vineland Facility Wind Gap Facility	State ID- State ID- State ID-	NJ: 02015 NJ: 06005 NJ: PA001					



Dayton, NJ

Custody Doo	cuments and Other Forms
	ollowing where applicable:

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Client / Reporting Information Company Name:	Project Nam	e:	Projec	t Inform	ation						13	S	,		Requested	Analysi	s			Matrix Codes	
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Oby State PA 19107	Prom		State	Billing Inf	ormation (if dif Name	ferent from	Report to)			15	Ammor	TK &	XV03						SW - Surface Water SO - Soft SL- Studge	
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315-656-6545 Sampler(s) Name(s) 610 Prions #	Project Mane	Topi		Aitention:							ار اق	Al Kolinato	-	\ \\ \-		1				EB-Equipment Blank RB - Rinse Blank	1
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2F PR. as			1320	7	G Sin	9	X	X	Ш		×	×	×	X		1	1 1		+	63874	
3F PR-am			1320		G SW	9	X	X	П	\top	×	×	x	X		T	T		1	1917	1
MF PR. aD			1320		G SW	9	X	X		\top	X	×	X	X			+		+-	SUB	
5F PR-35			1250		G 50	9	Х	X		T	X	×	X	X			\top		1		
6F PR-3m			1250		G SW	9	X	X.		TT	X	×	X	X			1		+		1
7F PR. 3D			1250		G 5W	9	X	X			×	X	X	X		1	1	_	1		1
8F PR. 45 (*See note)		1	1145	V	G SW	9	×	X		\top	X	×	X	Y					1-	,	1
								M		$\top \top$,		Δ		1			_71	10	1
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1 Business Day*					Commercial *C	;•			ato Form						TPAL	1 30	amo	les	10	TO * Rei Sold mar	mg in
All data available via Lablink A				, –	Com	merciai "A	" = Results	only; Con	nmercial	'B'' = Re	suits + QC	Summer	y .		MET	! Re	ide	cl	<i>a</i> 6	SYA	tric'
		or 1-3 Business C Sample		t be doc	umented belo	ommercia	I"C" ≈ Res	ults + OC	Summan	+ Partial	Raw date					b	tto://www	.sas.com	/en/terr		K r ono
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JC91795X: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number: JO	C91795	Client:	USACE-PHILA	ADELPHIA DIS	STRICT	Project: PHILADELPHIA D	ISTRICT	, RESERVO	OIR SAMPL
Date / Time Received: 7/	17/2019	7:38:00 PM	Delivery Met	hod:		Airbill #'s:			
	•	, ,	•	,	,	1); Cooler 5: (2.7); Cooler 6: (1); Cooler 5: (2.7); Cooler 6: (, ,	
Custody Seals Present:		3. COC F 4. Smpl Date or N IR Gun ce (Bag) 7 or N V U U U U U U U U U U U U	Present: [es/Time OK [- -	Y or N	Sample labels Container labe Sample Integri Sample Integri Sample Integri Sample Integri All containers Sample Integri Analysis requi Bottles receive Sufficient volu	ner label / COC agree: ty - Condition within HT: accounted for: ample: ty - Instructions ested is clear: ed for unspecified tests ime recvd for analysis: instructions clear:	Y V V V V V V V V V V V V V V V V V V V	or N or N Intact v i	 N/A
Test Strip Lot #s: Comments	pH 1-12:	229517		pH 12+:	208717	Other: (Specify)			
SM089-03									

SM089-03 Rev. Date 12/7/17

JC91795X: Chain of Custody

Page 2 of 2



Dayton, NJ 08/05/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC91795XA

Sampling Date: 07/17/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 18



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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> Please share your ideas about how we can serve you better at: EHS.US.CustomerCare@sgs.com

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499

1 of 18

Sections:

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-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	5
Section 3: Misc. Forms	16
3.1: Chain of Custody	17



Sample Summary

USACE-Philadelphia District

Job No: JC91795XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC91795-1F	07/17/19	12:10 GW	07/17/19	AQ	Surface H2O Filtered	PR-1S
JC91795-1XA	07/17/19	12:10 GW	07/17/19	AQ	Surface Water	PR-1S
JC91795-2F	07/17/19	13:20 GW	07/17/19	AQ	Surface H2O Filtered	PR-2S
JC91795-2XA	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2S
JC91795-3F	07/17/19	13:20 GW	07/17/19	AQ	Surface H2O Filtered	PR-2M
JC91795-3XA	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2M
JC91795-4F	07/17/19	13:20 GW	07/17/19	AQ	Surface H2O Filtered	PR-2D
JC91795-4XA	07/17/19	13:20 GW	07/17/19	AQ	Surface Water	PR-2D
JC91795-5F	07/17/19	12:50 GW	07/17/19	AQ	Surface H2O Filtered	PR-3S
JC91795-5XA	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3S
JC91795-6F	07/17/19	12:50 GW	07/17/19	AQ	Surface H2O Filtered	PR-3M
JC91795-6XA	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3M
JC91795-7F	07/17/19	12:50 GW	07/17/19	AQ	Surface H2O Filtered	PR-3D



Sample Summary (continued)

USACE-Philadelphia District

Job No: JC91795XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC91795-7XA	07/17/19	12:50 GW	07/17/19	AQ	Surface Water	PR-3D
JC91795-8F	07/17/19	11:45 GW	07/17/19	AQ	Surface H2O Filtered	PR-4S
JC91795-8XA	07/17/19	11:45 GW	07/17/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis



Certificate of Analysis

Laboratory No.: 9025191 **Report:** 08/01/19

Project: Army Corp Reservoirs

Lab Contact: Richard A Wheeler

Attention: Tammy McCloskey

Reported To: SGS North America

2235 US Highway 130 Dayton, NJ 08810

Lab ID: 9025191-01 **Collected By:** Client **Sampled:** 07/17/19 12:10 **Received:** 07/19/19 08:30

Sample Desc: PR-1S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL

Lab ID: 9025191-02 **Collected By:** Client **Sampled:** 07/17/19 13:20 **Received:** 07/19/19 08:30

Sample Desc: PR-2S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analvzed	Notes	Analyst
Dissolved General Chemist		0.111				1 111111 / 11 1111	1,000	
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL

Lab ID: 9025191-03 **Collected By:** Client **Sampled:** 07/17/19 13:20 **Received:** 07/19/19 08:30

Sample Desc: PR-2M Sample Type: Grab

				Rep.					
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P,	< 0.007	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, U	JCL	
Dissolved									
General Chemistry									
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL	



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Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 1 of 10



Lab ID: 9025191-04 **Collected By:** Client **Sampled:** 07/17/19 13:20 **Received:** 07/19/19 08:30

Sample Desc: PR-2D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	t r y								
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL	
General Chemistry									
Phosphorus as P, Total	0.03	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL	

Lab ID: 9025191-05 **Collected By:** Client **Sampled:** 07/17/19 12:50 **Received:** 07/19/19 08:30

Sample Desc: PR-3S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.01	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL

Lab ID: 9025191-06 **Collected By:** Client **Sampled:** 07/17/19 12:50 **Received:** 07/19/19 08:30

Sample Desc: PR-3M Sample Type: Grab

				Rep.					
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P, Dissolved	0.01	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL	
General Chemistry									
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL	

Lab ID: 9025191-07 **Collected By:** Client **Sampled:** 07/17/19 12:50 **Received:** 07/19/19 08:30

Sample Desc: PR-3D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.05	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.06	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL



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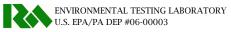
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Page 2 of 10



Lab ID: 9025191-08 **Collected By:** Client **Sampled:** 07/17/19 11:45 **Received:** 07/19/19 08:30

Sample Desc: PR-4S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	t r y							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	07/19/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.01	SM 4500-P E	07/19/19		JCL



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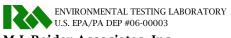
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Page 3 of 10





Quality Control

General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9G1163								
MB (B9G1163-BLK1)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9G1163-BLK2)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9G1163-BLK3)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
LFB (B9G1163-BS1)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	1.01	0.05	mg/l	101	80-120			
Batch B9G1189								
MB (B9G1189-BLK1)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9G1189-BLK2)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9G1189-BLK3)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
LFB (B9G1189-BS1)				Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	1.00	0.05	mg/l	100	80-120			
LFM (B9G1189-MS1)		Source: 9025191-03	3	Prepared & Ana	alyzed: 07/19/2019)		
Phosphorus as P, Total	1.00	0.05	mg/l	98.6	80-120			



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Page 4 of 10



)	ntinued)	Chemistry	General
	шшшиес	Chemisuv	General

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9G1189 (Continued)								
LFMD (B9G1189-MSD1)		Source: 9025191-03		Prepared & Ana	alyzed: 07/19/20)19		
LFMD (B9G1189-MSD1) Phosphorus as P, Total	1.00	Source: 9025191-03 0.05	mg/l	Prepared & Ana 97.8	alyzed: 07/19/20 80-120	0.800	20	

Dissolved General Chemistry

		D1330	iveu Gei	ierai Chemisu	· y			
	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9G1166								
MB (B9G1166-BLK1)				Prepared & Ana	alyzed: 07/19/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
LFB (B9G1166-BS1)				Prepared & Ana	alyzed: 07/19/20	19		
Phosphorus as P, Dissolved	1.01	0.05	mg/l	101	80-120			G-11
LFM (B9G1166-MS1)		Source: 9025191-02		Prepared & Ana	alyzed: 07/19/20	19		
Phosphorus as P, Dissolved	1.01	0.05	mg/l	99.5	80-120			
LFMD (B9G1166-MSD1)		Source: 9025191-02		Prepared & Ana	alyzed: 07/19/20	19		
Phosphorus as P, Dissolved	1.00	0.05	mg/l	98.8	80-120	0.694	20	
Batch B9G1190								
MB (B9G1190-BLK1)				Prepared & Ana	alyzed: 07/19/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
LFB (B9G1190-BS1)				Prepared & Ana	alyzed: 07/19/20	19		
Phosphorus as P, Dissolved	1.02	0.05	mg/l	102	80-120			G-11



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Page 5 of 10



Preparation Methods

Specific Method	Preparation Method	Prepared Date	Prepared By
9025191-01			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-02			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-03			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-04			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-05			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-06			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-07			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL
9025191-08			
SM 4500-P E	SM 4500-P B	07/19/2019	JCL

Notes and Definitions

G-11 The sample was filtered after it was received at the laboratory.

J Estimated value

U Analyte was not detected above the indicated value.



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Page 6 of 10



SGS North America 9025191

PM: RAW

Army Corp Reservoirs

Page 1 of 2

OW. Denking Water
OW. Scauler Water
SW. Surface Water
SO. Soil
BL. Studge
SED. Sodient
OI. Oil
LIQ. Other Liquid
SOI. Other Soil
RR. After
SOI. Other Soil
FB. Field Blank
EB-Equipment Blank
FB. Field Blank
FB. Field Blank http://www.sgs.com/en/terms-and-conditions LAB USE ONLY Matrix Codes JC91795XA Therm. ID: 3.9° eceived By: # qof S5S Requested Analysis Custody must be documented below each time samples change possession, including courier delivery. Date / Time: × × , **4**04T Commercial "6" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data MYASP Category A
NYASP Category B
State Forms
EDD Format
X Other REDT2 74 × × , 409Т, МӘЯЭТІЯ ЕИСОБЕ WEOH DI Mater NONE H2804 HNO2 HCI Commercial "A" = Results Only Billing Information (if different from Report to) Company Name Relinquished By: State Commercial "A" (Level 1)

Commercial "B" (Level 2)

FULLY1 (Level 3+4)

NJ Reduced

Commercial "C" Data Dell Philadelphia District, Reservoir Sampling # of bottles Matrix ΑQ Ą å å ğ å Ā ΑÖ ΑQ Aa ΑQ Ā reet Address Project Information scelved By: O Gills Da 12:50:00 PM GW ĕ Š δĶ 12:50:00 PM GW 12:50:00 PM GW 12:10:00 PM GW š 1:20:00 PM GW Š 1:20:00 PM GW 12:50:00 PM GW City FOGEX 1:20:00 PM 1:20:00 PM 1:20:00 PM 12:10:00 PM 1:20:00 PM | Standard 10 Business Days
| Standard 10 Business Days
| Standard 2 Business Days RUSH
| 2 Business Days RUSH
| 1 Business Days RUSH
| Content Days 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 7/17/19 Approved By (SGS PM); / Date; Client Purchase Order# Phone Project Manager MEOH/DI Vial # Project Name: Client / Reporting Information 6F PR-3M / - 0 (L Field ID / Point of Collection 40-3XA PR-2M > - 0 S 40-Relinquished by: Tecker (O -6F PR-3S / 05 olect Contact E-mail tammy.mccloskey@sgs.com 4XA PR-2D PR-2S 5XA PR-3S 2XA PR-2S PR-18 6XA PR-3M PR-1S 4F PR-2D Sampler(s) Name(s) GW reet Address ¥ ¥. 2F

Page 7 of 10

Cooler Temp. 'C

9 E

Preserved where applicable

☐ Absent

Intact Not intact

8:30 Custody Seal #

61-61-6

Received By:

Date / Time:

Relinquished by:

JC91795XA.xls Rev. Date: 4/10/18

Page 8 of 10

9025191 Page 2 of 2

CHAIN OF CUSTODY SGS North America Inc. - Dayton 2235 Route 130, Dayton, NJ. 08810 TEL. 732-328-0200 FAX: 732-329-349913480

			SOS North America in Dayfor	h Ame	out colu	760	5												
			2235 Route 130, Dayton, NJ 08810	te 130,	Dayton,	NJ 088				192	FED-EX Tracking #	78			Bottle Or	Bottle Order Control #			
A L CASA CONTRACTOR AND A STATE OF THE STATE		-	TEL, 732-329-0200 FAX; 732-329-3499/3480 www.srs.com/ehsusa)200 F	29-0200 FAX: 732-329	-329-349 ISB	9/3480			808	SGS Quote #				# dol SGS		JC91795XA	_	
Client / Reporting Information			Project Information	nformat	lon	1							8	quested	Requested Analysis			Matri	Matrix Codes
Company Name:	Project Name:									_									
		£	Philadelphia District, Reservoir Sampling	rict, Res	ervoir Sa	mpling												e o o	DW - Drinking Water GW - Ground Water
Street Address	Street		_							П			-					WW SW - SW	WW - Water / - Surface Water
				Billing In	Billing Information (if different from Report to)	f different	from Reg	ort to)		1								8;	SO - Sail
City State Zip	A		State	Company	Name													 	St Sludge SED-Sediment Of - Oil
Project Contect E-mail tammy.mccloskey@sgs.com	Project#			Street Address	dress					ni I								ol S	LIQ - Other Liquid AIR - Air
Phone #	Client Purchase Order#	ler#		Cify			State		d _Z	<u> </u>								F F	WP - Wipe FB - Field Blank
Sampler(s) Name(s) Phone GW	Phone Project Manager			Attention:						109T								EB-Equi	EB-Equipment Blank RB - Rinse Blank TB - Trip Blank
			Collection	Γ		ľ	Numbe	Jumber of preserved Bottles	ed Bottles	NE						_			
sos sampie e Field ID / Point of Collection	MECH/DI Vial #	Date	Тт	Sampled	Matrix	# of hottles	HOUN	BNON H*20°	ENCOSE MEOH DI Matel	FILTER	, 40qT							LABU	LAB USE ONLY
7XA PR-3D \ \C)		7/17/19	12:50:00 PM	ΝĐ	å				_		×								
7F PR-3D		7/17/19	12:50:00 PM	GW	å					_	×								
8XA PR-4S / - 0 &		7/17/19	11:45:00 AM	GW	Aa						×								
8F PR-4S		7/17/19	11:45:00 AM	W _O	AQ					_	×								
							-												
							=	=			_	_		-	_	-	1	_	
Turnaround Time (Business days)						Data De	Data Deliverable Information	nformatic	5						omments /	Comments / Special Instructions	ctions		
Standard 10 Business Days E Business Days RUSH 3 Business Days RUSH	Approved By (SGS PM); / Date:	V); / Date:		امَامُون	Commercial "A" (Level 1) Commercial "B" (Level 2) FULT1 (Level 3+4) NJ Reduced	"A" (Lev	23		NYASP Catego NYASP Catego State Forms EDD Format	NYASP Category A NYASP Category B State Forms EDD Format									
2 Business Days RUSH				Ŏ	Commercial "C"	.c.		×	X other REDT2	EDT2									
1 Business Day EMERGENCY X Other Due 7/31/2019					001	Commercial "A" = Results Only Commercial "B" = Results + QC Summary	'A" = Resu 'B' = Resu	ilts + QC	Summary	:	-				3	30	l'actuaca a	bitantilismo pro semilariono con discono	or citizen
Emergency & Rush 1/A data available via Laburitk Approval needed for NOST-LERIFE Jerky 1/A. Sample Cu	REGUED TOT INCOMINA	Sample Cus	Sample Custody must be documented below each time samples change possession, including courier delivery.	ocument	woled be	Veach time samples change possession, including of	samples	change	possess	ion, inch	rding cou	rier deliv	ż		_	200			
Refinement by: Just Just	15 154 B	Received By: Fed	edox	×		2 2	Relinquished By: 2	By:					Date / Time:		Received By:	By:			
Relinquished by: For 0 X Date / Thins:		Received By:		20	2	, Q	Relinguished By: 4	By:					Date / Time:		Received By:	By:			
Relinquished by: Date / Time:		Received By: 5	P				Custody Seal #	12.		O Intact	act	Preserve	Preserved where applicable Absent	olicable Then	€O	"Therm. ID: 3 . 9 " On Ice		Cooler Temp. 'C	0

JC91795XA.xls Rev. Date: 4/10/18

Page 9 of 10

Date / Time: 7/18/2019 1:18:56 PM

BETHW CSR:

JC91795XA Job #:

Client Project: Philadelphia District, Reservoir Sampling

Deliverable: REDT2

TAT: Due 7/31/2019

Sub Lab: MJ Reider Associates Inc, Env. Testing Laboratories

Address: 107 Angelica Street

City: Reading State: PA

Zip: 19611

Contact: Sample Receiving / Rich Wheeler Phone: 610-374-5129

SGS Sample #	Client Sample Description	Analysis	Location	Sampled By	Date Sampled	Time Sampled	Aliquot
JC91795-1XA	PR-1S	TP04,		<u>GW</u>	7/17/2019	12:10:00 PM	
JC91795-1F	<u>PR-1S</u>	FILTERGN, TPO4.		<u>GW</u>	7/17/2019	12:10:00 PM	
JC91795-2XA	PR-2S	TP04.		<u>R</u>	7/17/2019	1:20:00 PM	
JC91795-2F	PR-2S	FILTERGN, TPO4,		GW	7/17/2019	1:20:00 PM	
JC91795-3XA	PR-2M	TPO4.		<u>R</u>	7/17/2019	1:20:00 PM	
JC91795-3F	PR-2M	FILTERGN, TPO4,		GW	7/17/2019	1:20:00 PM	
JC91795-4XA	PR-2D	TP04.		<u>GW</u>	7/17/2019	1:20:00 PM	
JC91795-4F	PR-2D	FILTERGN, TPO4,		<u>GW</u>	7/17/2019	1:20:00 PM	
JC91795-5XA	PR-3S	TP04.		<u>GW</u>	7/17/2019	12:50:00 PM	
JC91795-5F	PR-3 <u>S</u>	FILTERGN, TPO4,		<u>@</u>	7/17/2019	12:50:00 PM	
JC91795-6XA	PR-3M	TPO4.		<u>R</u>	7/17/2019	12:50:00 PM	
JC91795-6F	PR-3M	FILTERGN, TPO4,		<u>GW</u>	7/17/2019	12:50:00 PM	
JC91795-7XA	<u>PR-3D</u>	TP04,		<u>GW</u>	7/17/2019	12:50:00 PM	
JC91795-7F	<u>PR-3D</u>	FILTERGN,TPO4,		<u>GW</u>	7/17/2019	12:50:00 PM	
JC91795-8XA	PR-4S	TPO4.		<u>W</u>	7/17/2019	11:45:00 AM	
JC91795-8F	PR-4S	FILTERGN, TPO4,		<u>GW</u>	7/17/2019	11:45:00 AM	

MJRA Terms & Conditions

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

Sample Submission, Sample Acceptance & Sampling Containers

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

Turnaround Times (TAT)

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. *RUSH TAT Surcharges are applied for expedited turnaround times.

Analytical Results, Sample Collection Integrity & Subcontracting

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

Payment Terms

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

Warranty & Litigation

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:

Rafael A Quijada For Richard A Wheeler Director of Field Services



107 Angelica Street O Reading, PA 19611 O www.mjreider.com O (610) 374-5129 O fax (610) 374-7234

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

Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 10 of 10



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Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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JC91795XA: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number: JC91795		Client:	USACE-PHILADELPHIA DISTRICT				Project: PHILADELPHIA DISTRICT, RESERVOIR SAMPL				
Date / Time Received: 7	/17/2019 7:38:00	Delivery Method:				Airbill #s:					
Cooler Temps (Raw Meas	Cooler 2: (2.3); Cooler 3: (2.9); Cooler 4: (3.1); Coo					5: (2.7); Cooler 6:	(2.9); Cod	oler 7: (2.7)	;		
Cooler Temps (Corre	cted) °C: Coole	er 1: (2.8)	Cooler 2:	(2.3); (Cooler 3: (2.9); Cooler 4: (3.1); Cooler	5: (2.7); Cooler 6:	(2.9); Cod	oler 7: (2.7)	,
Cooler Security	Y or N				or N	Sample Integrit	y - Docum	entation	<u>Y</u>	or N	
1. Custody Seals Fresent.		3. COC P				Sample labels present on bottles:		\checkmark			
2. Custody Seals Intact:	✓ □ 4.	Smpl Date	es/Time OK	✓		Container labeling complete:		\checkmark			
Cooler Temperature	Y or N	_				3. Sample contair	ner label / C	OC agree:	✓		
1. Temp criteria achieved:	✓ _]				Sample Integri	y - Condit	tion_	<u>Y</u>	or N	
Cooler temp verification:	IR Gun				Sample recvd within HT:			✓			
3. Cooler media:	ler media: Ice (Bag)					All containers accounted for:			~		
4. No. Coolers:	7					3. Condition of sample:		_	Intact		
Quality Control Preserva	tion Y or I	I N/A	4			Sample Integri	tv - Instruc	ctions	Y	or N	N/A
1. Trip Blank present / coole	r: 🗌 🔽					1. Analysis reque			<u> </u>		
2. Trip Blank listed on COC:						Bottles receive				<u> </u>	
3. Samples preserved prope	rly: 🔽 🗆]				Sufficient volu	me recvd fo	r analysis:	~		
4. VOCs headspace free:						Compositing in		•			~
						5. Filtering instru	ctions clear	:			\checkmark
Test Strip Lot #s:	pH 1-12:	229517		pŀ	H 12+:	208717	0	ther: (Specify)			
Comments											
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JC91795XA: Chain of Custody

Page 2 of 2



Dayton, NJ 08/27/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

Prompton

SGS Job Number: JC92500

Sampling Date: 07/31/19



Army Corps of Engineers

joseph.m.loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 22

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 SGS is the sole authority for authorizing edits or modifications to this document. Please share your ideas about

Sections:

Table of Contents

-1-

Section 1: Sample Summary						
Section 2: Case Narrative/Conformance Summary	4					
Section 3: Summary of Hits						
Section 4: Sample Results						
4.1: JC92500-1: PR-1S						
4.2: JC92500-2: PR-2S	13					
4.3: JC92500-3: PR-2M						
4.4: JC92500-4: PR-2D	15					
4.5: JC92500-5: PR-3S	16					
4.6: JC92500-6: PR-3M	17					
4.7: JC92500-7: PR-3D	18					
4.8: JC92500-8: PR-4S	19					
Section 5: Misc. Forms	20					
5.1: Chain of Custody	21					



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Sample Summary

USACE-Philadelphia District

Job No: JC92500

Philadelphia District, Reservoir Sampling Project No: Prompton

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC92500-1	07/31/19	12:05 GW	07/31/19	AQ	Surface Water	PR-1S
JC92500-2	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2S
JC92500-3	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2M
JC92500-4	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2D
JC92500-5	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3S
JC92500-6	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3M
JC92500-7	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3D
JC92500-8	07/31/19	11:45 GW	07/31/19	AQ	Surface Water	PR-4S

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District Job No JC92500

Site: Philadelphia District, Reservoir Sampling Report Date 8/14/2019 1:58:34 PM

On 07/31/2019, 8 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC92500 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ Batch ID: GP22967

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92500-1DUP, JC92500-1MS were used as the QC samples for Nitrogen, Total Kjeldahl.
- Matrix Spike Recovery(s) for Nitrogen, Total Kjeldahl are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ Batch ID: GP22893

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92496-1MS, JC92730-1DUP were used as the QC samples for Nitrogen, Nitrate + Nitrite.

Matrix: AQ Batch ID: GP22894

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92500-5DUP, JC92500-5MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ Batch ID: R180250

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180251

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180252

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-3 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180253

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180254

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180255

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-6 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180256

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-7 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180257

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC92500-8 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

General Chemistry By Method SM2320 B-11

Matrix: AQ Batch ID: GN98359

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92496-1DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC92500-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC92500-3 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC92500-1 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC92500-2 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

Matrix: AQ Batch ID: GN98432

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92500-5DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC92500-5 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC92500-8 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC92500-6 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC92500-7 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

General Chemistry By Method SM2540 C-11

Matrix: AQ Batch ID: GN98332

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92500-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM2540 D-11

Matrix: AQ Batch ID: GN98274

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92600-1DUP were used as the QC samples for Solids, Total Suspended.

Matrix: AO Batch ID: GN98322

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92500-1DUP were used as the QC samples for Solids, Total Suspended.
- JC92500-2 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JC92500-1 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JC92500-3 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JC92500-6 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 800 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JC92500-5 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JC92500-4 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Matrix: AO Batch ID: GN98384

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92566-1DUP were used as the QC samples for Solids, Total Suspended.
- JC92500-7 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 200 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AO Batch ID: GP22923

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92411-1DUP, JC92411-1MS, JC92411-1MSD were used as the QC samples for Nitrogen, Ammonia.

General Chemistry By Method SM4500NO2 B-11

Matrix: AQ Batch ID: GN98175

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92512-9DUP, JC92512-9MS were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AQ Batch ID: GP22758

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC92500-8DUP were used as the QC samples for BOD, 5 Day.

Wednesday, August 14, 2019

Page 4 of 5

General Chemistry By Method SM5310 B-11

Matrix: AQ Batch ID: GP22884

Sample(s) JC92847-1MS, JC92847-1MSD were used as the QC samples for Total Organic Carbon.

Matrix: DW Batch ID: GP22884

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits Job Number: JC92500

Account: USACE-Philadelphia District

Philadelphia District, Reservoir Sampling 07/31/19 **Project:**

Collected:

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
JC92500-1 PR-1S					
Alkalinity, Total as CaCO3 ^a Nitrogen, Nitrate ^b Nitrogen, Nitrate + Nitrite Nitrogen, Total Kjeldahl Solids, Total Dissolved Total Organic Carbon	35.0 0.24 0.24 0.24 43.0 2.5	10 0.11 0.10 0.20 10 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA353.2/SM4500NO2B EPA 353.2/LACHAT EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11
JC92500-2 PR-2S					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^c Total Organic Carbon	25.0 4.0 0.42 57.0 5.0 4.0	10 3.4 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC92500-3 PR-2M					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^c Total Organic Carbon	30.0 3.8 0.98 59.0 5.0 4.3	10 3.4 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC92500-4 PR-2D					
Alkalinity, Total as CaCO3 ^a Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^c Total Organic Carbon	29.0 0.58 54.0 5.2 3.5	10 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC92500-5 PR-3S					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^c Total Organic Carbon	17.0 3.6 0.96 52.0 4.2 4.0	10 3.4 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11

Summary of Hits Job Number: JC92500

Account: USACE-Philadelphia District

Project: Philadelphia District, Reservoir Sampling

Collected: 07/31/19

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
JC92500-6 PR-3M					
Alkalinity, Total as CaCO3 ^a	30.0	10		mg/l	SM2320 B-11
BOD, 5 Day	4.9	3.4		mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	0.35	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	44.0	10		mg/l	SM2540 C-11
Total Organic Carbon	3.5	1.0		mg/l	SM5310 B-11
JC92500-7 PR-3D					
Alkalinity, Total as CaCO3 ^a	43.0	10		mg/l	SM2320 B-11
Nitrogen, Ammonia	1.0	0.20		mg/l	SM4500NH3 H-11LACHAT
Nitrogen, Total Kjeldahl	1.5	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	50.0	10		mg/l	SM2540 C-11
Solids, Total Suspended ^d	17.0	4.0		mg/l	SM2540 D-11
Total Organic Carbon	5.5	1.0		mg/l	SM5310 B-11
JC92500-8 PR-4S					
Alkalinity, Total as CaCO3 ^a	34.0	10		mg/l	SM2320 B-11
Nitrogen, Nitrate b	0.14	0.11		mg/l	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.14	0.10		mg/l	EPA 353.2/LACHAT
Nitrogen, Total Kjeldahl	0.32	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	52.0	10		mg/l	SM2540 C-11
Solids, Total Suspended	5.6	4.0		mg/l	SM2540 D-11
Total Organic Carbon	3.7	1.0		mg/l	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

⁽d) Reported sample aliquot obtained from filtration of 200 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.



Dayton, NJ

Section 4

Sample Results		
Report of Analysis		
-		

Page 1 of 1

Report of Analysis

Client Sample ID: PR-1S Lab Sample ID: JC92500-1

Lab Sample ID:JC92500-1Date Sampled:07/31/19Matrix:AQ - Surface WaterDate Received:07/31/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

General Chemistry

Analyte	Result	RL	L Units		Analyzed	By	Method
	25.0	10	/4		00/05/10 15 01		
Alkalinity, Total as CaCO3 ^a	35.0	10	mg/l	1	08/06/19 16:24	MS	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	08/01/19 21:36	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	08/09/19 17:01	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^b	0.24	0.11	mg/l	1	08/08/19 16:21	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.24	0.10	mg/l	1	08/08/19 16:21	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:03	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.24	0.20	mg/l	1	08/14/19 11:05	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	43.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
Solids, Total Suspended ^c	< 4.0	4.0	mg/l	1	08/06/19 09:44	RC	SM2540 D-11
Total Organic Carbon	2.5	1.0	mg/l	1	08/08/19 20:44	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Report of Analysis

Client Sample ID: PR-2S Lab Sample ID: JC92500-2

General Chemistry

Date Sampled: 07/31/19 Matrix: AQ - Surface Water **Date Received:** 07/31/19 Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte Result RLUnits DF Analyzed By Method Alkalinity, Total as CaCO3 a 25.0 10 mg/l 1 08/06/19 16:24 MS SM2320 B-11 BOD, 5 Day 3.4 4.0 mg/l 1 08/01/19 21:40 EB SM5210 B-11 Nitrogen, Ammonia < 0.20 0.20 mg/l 1 08/09/19 17:02 KI SM4500NH3 H-11LACHAT Nitrogen, Nitrate b < 0.11 0.11 1 mg/l 08/08/19 16:22 KI EPA353.2/SM4500NO2B Nitrogen, Nitrate + Nitrite 1 < 0.10 0.10 mg/l08/08/19 16:22 KI EPA 353.2/LACHAT Nitrogen, Nitrite < 0.010 0.010 mg/l 1 08/01/19 11:03 JOO SM4500NO2 B-11 Nitrogen, Total Kjeldahl 0.42 0.20 mg/l1 08/14/19 11:06 кі EPA 351.2/LACHAT Solids, Total Dissolved 57.0 10 mg/l 1 08/06/19 15:37 RC SM2540 C-11 Solids, Total Suspended ^c 5.0 4.0 mg/l 1 08/06/19 09:44 RC SM2540 D-11 Total Organic Carbon 4.0 1.0 mg/l 1 08/08/19 20:55 CD SM5310 B-11

Page 1 of 1

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Page 1 of 1

Report of Analysis

Client Sample ID: PR-2M
Lab Sample ID: JC92500-3
Matrix: AQ - Surface Water

Date Sampled: 07/31/19
Date Received: 07/31/19

Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

General Chemistry

Analyte		Result	RL	Units	DF	Analyzed	By	Method
	Alkalinity, Total as CaCO3 ^a	30.0	10	mg/l	1	08/06/19 16:24	MS	SM2320 B-11
	BOD, 5 Day	3.8	3.4	mg/l	1	08/01/19 21:43		SM5210 B-11
	Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	08/09/19 17:04		SM4500NH3 H-11LACHAT
	Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	08/08/19 16:23	KI	EPA353.2/SM4500NO2B
	Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	08/08/19 16:23	KI	EPA 353.2/LACHAT
	Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:03	JOO	SM4500NO2 B-11
	Nitrogen, Total Kjeldahl	0.98	0.20	mg/l	1	08/14/19 11:06	KI	EPA 351.2/LACHAT
	Solids, Total Dissolved	59.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
	Solids, Total Suspended ^c	5.0	4.0	mg/l	1	08/06/19 09:44	RC	SM2540 D-11
	Total Organic Carbon	4.3	1.0	mg/l	1	08/08/19 21:06	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Report of Analysis

Client Sample ID: PR-2D Lab Sample ID: JC92500-4

Lab Sample ID:JC92500-4Date Sampled:07/31/19Matrix:AQ - Surface WaterDate Received:07/31/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

General Chemistry

Analyte		Result	RL	Units	DF	Analyzed	By	Method
	Alkalinity, Total as CaCO3 ^a	29.0	10	mg/l	1	08/06/19 16:26	MS	SM2320 B-11
	BOD, 5 Day	< 3.4	3.4	mg/l	1	08/01/19 21:46	EB	SM5210 B-11
	Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	08/09/19 17:05	KI	SM4500NH3 H-11LACHAT
	Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	08/08/19 16:24	KI	EPA353.2/SM4500NO2B
	Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	08/08/19 16:24	KI	EPA 353.2/LACHAT
	Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:03	JOO	SM4500NO2 B-11
	Nitrogen, Total Kjeldahl	0.58	0.20	mg/l	1	08/14/19 11:07	KI	EPA 351.2/LACHAT
	Solids, Total Dissolved	54.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
	Solids, Total Suspended ^c	5.2	4.0	mg/l	1	08/06/19 09:44	RC	SM2540 D-11
	Total Organic Carbon	3.5	1.0	mg/l	1	08/08/19 21:40	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Report of Analysis

Client Sample ID: PR-3S Lab Sample ID: JC92500-5

Date Received: 07/31/19 Matrix: AQ - Surface Water Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Date Sampled: 07/31/19

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	17.0	10	mg/l	1	08/07/19 20:39	MS	SM2320 B-11
BOD, 5 Day	3.6	3.4	mg/l	1	08/01/19 21:50		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	08/09/19 17:07	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	08/08/19 16:33	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	08/08/19 16:33	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:22	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.96	0.20	mg/l	1	08/14/19 11:08	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	52.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
Solids, Total Suspended ^c	4.2	4.0	mg/l	1	08/06/19 09:44	RC	SM2540 D-11
Total Organic Carbon	4.0	1.0	mg/l	1	08/08/19 21:51	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

Page 1 of 1

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Page 1 of 1

Report of Analysis

Client Sample ID: PR-3M Lab Sample ID: JC92500-6

Date Sampled: 07/31/19 Matrix: **Date Received:** 07/31/19 AQ - Surface Water

Project: Philadelphia District, Reservoir Sampling

Percent Solids: n/a

General Chemistry

Analyte		Result	RL	Units	DF	Analyzed	By	Method
	Alkalinity, Total as CaCO3 ^a	30.0	10	mg/l	1	08/07/19 20:39	MS	SM2320 B-11
	BOD, 5 Day	4.9	3.4	mg/l	1	08/01/19 21:52	EB	SM5210 B-11
	Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	08/09/19 17:08	KI	SM4500NH3 H-11LACHAT
	Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	08/08/19 16:34	KI	EPA353.2/SM4500NO2B
	Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	08/08/19 16:34	KI	EPA 353.2/LACHAT
	Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:22	JOO	SM4500NO2 B-11
	Nitrogen, Total Kjeldahl	0.35	0.20	mg/l	1	08/14/19 11:11	KI	EPA 351.2/LACHAT
	Solids, Total Dissolved	44.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
	Solids, Total Suspended ^c	< 4.0	4.0	mg/l	1	08/06/19 09:44	RC	SM2540 D-11
	Total Organic Carbon	3.5	1.0	mg/l	1	08/08/19 22:02	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

JC92500

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 800 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Report of Analysis

Client Sample ID: PR-3D Lab Sample ID: JC92500-7

Date Sampled: 07/31/19 Matrix: **Date Received:** 07/31/19 AQ - Surface Water Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Page 1 of 1

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	43.0	10	mg/l	1	08/07/19 20:39	MS	SM2320 B-11
BOD, 5 Day	< 3.4	3.4	mg/l	1	08/01/19 21:56	EB	SM5210 B-11
Nitrogen, Ammonia	1.0	0.20	mg/l	1	08/09/19 17:09	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	08/08/19 16:35	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	08/08/19 16:35	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:22	JOO	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.5	0.20	mg/l	1	08/14/19 11:12	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	50.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
Solids, Total Suspended ^c	17.0	4.0	mg/l	1	08/07/19 10:38	RC	SM2540 D-11
Total Organic Carbon	5.5	1.0	mg/l	1	08/08/19 22:13	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 200 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Page 1 of 1

Report of Analysis

Client Sample ID: PR-4S Lab Sample ID: JC92500-8 **Date Sampled:** 07/31/19 Matrix: AQ - Surface Water

Project: Philadelphia District, Reservoir Sampling

Date Received: 07/31/19 Percent Solids: n/a

General Chemistry

Analyte		Result	RL	Units	DF	Analyzed	By	Method
	Alkalinity, Total as CaCO3 ^a	34.0	10	mg/l	1	08/07/19 20:39	MS	SM2320 B-11
	BOD, 5 Day	< 3.4	3.4	mg/l	1	08/01/19 22:10	EB	SM5210 B-11
	Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	08/09/19 17:14	KI	SM4500NH3 H-11LACHAT
	Nitrogen, Nitrate b	0.14	0.11	mg/l	1	08/08/19 16:36	KI	EPA353.2/SM4500NO2B
	Nitrogen, Nitrate + Nitrite	0.14	0.10	mg/l	1	08/08/19 16:36	KI	EPA 353.2/LACHAT
	Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/01/19 11:22	JOO	SM4500NO2 B-11
	Nitrogen, Total Kjeldahl	0.32	0.20	mg/l	1	08/14/19 11:13	KI	EPA 351.2/LACHAT
	Solids, Total Dissolved	52.0	10	mg/l	1	08/06/19 15:37	RC	SM2540 C-11
	Solids, Total Suspended	5.6	4.0	mg/l	1	08/05/19 09:46	RC	SM2540 D-11
	Total Organic Carbon	3.7	1.0	mg/l	1	08/08/19 22:24	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)



Misc. Forms

Dayton, NJ

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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JC92500: Chain of Custody

Page 1 of 2

SGS Sample Receipt Summary

Job Number: JC925	Client:	USACE-PHILADELPHIA DIS	STRICT Project: PHILAD	ELPHIA DISTRICT, RESERVOIR SAMPL
Date / Time Received: 7/31/2	019 6:45:00 PM	Delivery Method:	Airbill #'s:	
, ,	, , ,	, ,,	.8); Cooler 4: (3.8); Cooler 5: (3.8); (3.7); Cooler 4: (3.7); Cooler 5: (3.7);	
Cooler Security Y	or N	Y or N	Sample Integrity - Documentation	Y or N
1. Custody Seals Present:	3. COC Pi		Sample labels present on bottles:	
2. Custody Seals Intact:	4. Smpl Date	s/Time OK 🗹 🗌	Container labeling complete:	
Cooler Temperature	Y or N		3. Sample container label / COC agree	lacksquare
1. Temp criteria achieved:	~		Sample Integrity - Condition	Y or N
Cooler temp verification:	IR Gun		Sample recvd within HT:	
3. Cooler media:	Ice (Bag)		All containers accounted for:	
4. No. Coolers:	7		3. Condition of sample:	Intact
Quality Control Preservation	Y or N N/A		Sample Integrity - Instructions	Y or N N/A
1. Trip Blank present / cooler:			Analysis requested is clear:	
2. Trip Blank listed on COC:			Bottles received for unspecified test	
3. Samples preserved properly:			3. Sufficient volume recvd for analysis:	
4. VOCs headspace free:			4. Compositing instructions clear:	
			5. Filtering instructions clear:	
Test Strip Lot #s: pH 1	I-12: <u>229517</u>	pH 12+:	208717 Other: (Spe	cify)
Comments				

SM089-03 Rev. Date 12/7/17

JC92500: Chain of Custody

Page 2 of 2



Dayton, NJ 08/21/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

Prompton

SGS Job Number: JC92500X

Sampling Date: 07/31/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph.M.Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 16



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 s or modifications to this document.

Please share your ideas about

Sections:

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-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	4
Section 3: Misc. Forms	14
3.1: Chain of Custody	15



Sample Summary

USACE-Philadelphia District

JC92500X Job No:

Philadelphia District, Reservoir Sampling Project No: Prompton

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC92500-1X	07/31/19	12:05 GW	07/31/19	AQ	Surface Water	PR-1S
JC92500-2X	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2S
JC92500-5X	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3S
JC92500-8X	07/31/19	11:45 GW	07/31/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis

Analytical Report

Serialized: 08/21/2019 08:50am QC35

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130

DAYTON,NJ 08810

Regarding:

SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

PROJECT ID:

W09769 USACE

LABORATORY REPORT NUMBER:

L7147730

Authorized by: Douglas J. Gump Client Services Manager

DarJU



Analytical Report

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810 Regarding: KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

	09769, SGS NORTH 09769 USACE, USAC	,		P.O. No:		Inv. No: PWSID No:	PI
	ample Description 'A-1S Received Date/Tim	e/Temp 07/31/	19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 07:00am NA C	Sampled by Customer
Parameter	eter Result Qual			Method	DF	RL	Test Date, Time, Analyst
ENVIRONMEN	NTAL MICROBIOL	OGY WA-1S	}				
Total Coliform, M Fecal Coliform, N		>2000 Q 9 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK
	ample Description A-2S Received Date/Tim	e/Temp 07/31/	19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp)7:45am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONMEN	NTAL MICROBIOL	OGY WA-2S	}				
Total Coliform, M Fecal Coliform, M		>2000 Q <1 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK

Analytical Report

Account No: W09769, SGS N Project No: W09769 USACE		:.	P.O. No:		Inv. No: PWSID No:	PI					
Sample ID Sample Descri L7147730-3 WA-3S Received Da	ption ate/Time/Temp 07/3 ⁴	I/19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 10:35am NA C	Sampled by Customer					
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONMENTAL MICRO	OBIOLOGY WA-3	s									
Total Coliform, MF Fecal Coliform, MF	>2000 Q 28 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					
Sample ID Sample Descri L7147730-4 WA-4S Received Da	ption ate/Time/Temp 07/3	1/19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 10:15am NA C	Sampled by Customer					
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONMENTAL MICRO	OBIOLOGY WA-4	S									
Total Coliform, MF Fecal Coliform, MF	>2000 Q 68 E, Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					
Sample ID Sample Descri L7147730-5 WA-5S Received Da	ption ate/Time/Temp 07/31	1/19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 10:00am NA C	Sampled by Customer					
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONMENTAL MICRO	OBIOLOGY WA-5	S									
Total Coliform, MF Fecal Coliform, MF	>2000 Q 16 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					
Sample ID Sample Descri L7147730-6 WA-6S Received Da	ption ate/Time/Temp 07/31	1/19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 09:05am NA C	Sampled by Customer					
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst					

Page 3 of 9

Analytical Report

	: W09769, SGS NORTH W09769 USACE, USAC				P.O. No:		Inv. No: PWSID No:	PI					
Sample ID L7147730-6	Sample Description WA-6S Received Date/Tim	0pm 1.0 C	Iced (Y/N): Y		te/Time/Temp 9:05am NA C	Sampled by Customer							
Parameter		Result Qual Units Method		Method	DF	RL	Test Date, Time, Analyst						
ENVIRONM	IENTAL MICROBIOL	OGY WA-6S											
Total Coliform Fecal Coliforn		>2000 Q <1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					
Sample ID L7147730-7	Sample Description WA-7S Received Date/Tim	e/Temp 07/31/1	9 05:0	0pm 1.0 C	Iced (Y/N): Y		te/Time/Temp 9:00am NA C	Sampled by Customer					
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONM	IENTAL MICROBIOL	OGY WA-7S											
Total Coliform Fecal Coliforn	,	>2000 Q <1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					
Sample ID L7147730-8	Sample Description PR-1S Received Date/Tim	ne/Temp 07/31/1	9 05:0	0pm 1.0 C	Iced (Y/N): Y		te/Time/Temp 2:05pm NA C	Sampled by Customer					
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONM	IENTAL MICROBIOL	OGY PR-1S											
Total Coliform	n, MF	>2000 Q		cfu/100ml	SM 9222B	10	10	07/31/19 08:15PM LK					
Sample ID L7147730-9	Sample Description PR-2S Received Date/Tim	e/Temp 07/31/1	9 05:0	0pm 1.0 C	Iced (Y/N): Y		te/Time/Temp 1:00pm NA C	Sampled by Customer					
Parameter		Result	Qual	Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONM	IENTAL MICROBIOL	OGY PR-2S											
Total Coliform Fecal Coliforn	*	880 E, Q <1 Q		cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					

Analytical Report

Account No: W09769, SGS Project No: W09769 USAC	,	NC.	P.O. No:		Inv. No: PWSID No:	PI					
Sample ID Sample Desc L7147730-10 PR-3S Received	cription Date/Time/Temp 07/	/31/19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 12:45pm NA C	Sampled by Customer					
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst					
ENVIRONMENTAL MICI	ROBIOLOGY PR-	3S									
Total Coliform, MF Fecal Coliform, MF	780 <1	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	07/31/19 08:15PM LK 07/31/19 07:25PM LK					
Sample ID Sample Desc L7147730-11 PR-4S Received	cription Date/Time/Temp 07/	/31/19 05:00pm 1.0 C	Iced (Y/N): Y		ate/Time/Temp 11:45am NA C	Sampled by Customer					
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst					

SM 9222B

SM 9222D

10

100

10

07/31/19 08:15PM LK

07/31/19 07:25PM LK

Sample Comments | Result Qualifiers:

ENVIRONMENTAL MICROBIOLOGY -- PR-4S

>2000 Q

12 Q

L7147730-1:

Total Coliform, MF

Fecal Coliform, MF

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

cfu/100ml

cfu/100ml

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-2:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-3:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-4:

Analytical Report

Account No: W09769, SGS NORTH AMERICA, INC.

P.O. No: Inv. No: PI
Project No: W09769 USACE, USACE

PWSID No:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-5:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: Fecal coliform, SM 9222D, result was compromised due to water from the water bath used for incubation leaking into the plastic bag containing the sample plate. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-6:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-7:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-8:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-9:

- E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.
- Q: Fecal coliform, SM 9222D, result was compromised due to water from the water bath used for incubation leaking into the plastic bag containing the sample plate. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7147730-10:

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available,

Analytical Report

Account No: W09769, SGS NORTH AMERICA, INC.

Project No: W09769 USACE, USACE

P.O. No: Inv. No: PWSID No:

the reported result may not be acceptable for regulatory purposes.

L7147730-11:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- Q: Fecal coliform, SM 9222D, result was compromised due to water from the water bath used for incubation leaking into the plastic bag containing the sample plate. Results may not be acceptable for regulatory purposes.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.





DEFINITIONS

The following terms or abbreviations are used in this report:

Eurofins QC, LLC (EQC)

<	Less than: In conjunction with a numerical value,								
	indicates a concentration less than RL / MDL								
>	Greater than: In conjunction with a numerical value,								
	indicates a concentration greater than RL / MDL								
CFU	Colony Forming Unit								
DF	Dilution Factor (For Microbiology, DF = volume of								
	sample tested)								
DRY	Result was reported on a dry weight basis								
MCL	EPA recommended "Maximum Contaminant Level"								
MDL	Method Detection Limit								
MF	Membrane Filtration								
MPN	Most Probable Number								
ND	For odor test: No Odor Observed								
ND	For all other tests: Analyte concentration Not								
ND	Detected greater than the RL / MDL								

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB (µg/L)	Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
PPM (mg/L)	Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation (LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Data Qualifiers

J	Estimated value ≥ MDL, but < RL
T	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
E	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- · The report shall not be reproduced, except in full, without the written consent of the laboratory.
- · All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been
 performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for
 testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly)
 to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing
 results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Zachary Smith (Water Microbiology).

EQC Accreditations

Horsham Facility

East Rutherford Facility
Vineland Facility
Vind Gap Facility
Wind Gap Facility

NELAP/State IDsNJ: 02015
NJ: 06005
NJ: PA093 NY: 12080 MD: 357

PA093 NY: 12080 MD: 357

PA093 NY: 12080 MD: 357

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ų.	-	Matrix Codes	DW - Drinking Water	WW - Water SW - Surface Water	SC- Soul	LIQ Other Liquid AIR - Air	WP - Wpa WP - Wpa FB - Field Blank	EB-EQUIPMENT BYBINK RB - Rinse Bybink TB - Trip Blank		LAB USE ONLY								HARRIVES EN	FOREECON 07311			* **		rother lab		/gr		an/terms-and-conditions			Cooler Temp. "C
27147730-1		BIO AIRI D		L7147730-1	1.0C	CU/TS 07/31/19 1700 07/31/19 1752	-													-		Comments / Special Instructions		Samples to Europhy lab		1.00/1cd//OK/0K		CUM 075/11 ON VEICHES CONTINUES	1/19.1	Received By:	Therm 8
<u></u>	FED EX Tracking # SGS Quids #	-	اِنْهُ الْمُ	[2]	1.00	CU7.	pu	ام	ਰਕ	روه	X	×	×	×	×	メ	X	×	×	X	×		DOD-GSMS	- · · · · · · · · · · · · · · · · · · ·				S Summany B	SIII DONE TIME	Date / Time:	Inlact Preserved where applicable
X 0			alte Pronto	/			State Zip	E 0 &	Bottes	MGP CORRECTED IN ACCORDANCE IN	×	×	×	`x'	×	×	X X	*	X	×	×	Doliverable	NYASP.Category A	NYASP Category B	CT RCP Critoria	Stato Forms	EDD Format	Commercial "A" = Results only, Commercial "B" = Results + QC Summers Commercial "C" = Results + QC Summary + Partial Raw data	Relinquesta Branch Residential Residential Residential Branch Residential Branch Residential Residenti	Rollnquished By:	Custody Soal # Custody Soal # No
SACE CUSTODY	SGS North America Inc Dayton 2235 Route 130, Dayton, NJ 08810 TEL. 732-329-0200 FAX: 732-339-3499/3480 www.scs.comlehsusa	ormation	RS-FE. White	matton (ff. d)	Сотралу Nате	Struet Address		Attention:		Sempled Grap (G) Mathy bottlon C	V 6-500 2	G 500 3	G 50 3	93	6 50 J	3	1 G SW 3 14	38	6 SW 3	• • •	رم مر م		Commercial "A" (Level 1)	Commercial "B" (Lovel 2)	No reduced (Lovel 3) Full Tier I (Level 4)	Commercial "C"	NJ DKQP	Commercial "A" = F	1/3/1/5 18CD	Rolli 4	Cust
WOTH US ACK	SGS N 2235 TEL 732-3	Project Information	CE Ros		Have Of		Order#	McClosKey		Data Time	7/31/00/07/00/TU) SHZS .	1035	1015	000/	9905	0000	1205	06:1:	Shell	№ (1/45) №	- SAS	Approved By (SGS PM); / Date:		And a second process of the second particles of the second		The state of the s	Approval needed for 1-3 Business Day TAT	Recolv	Rocolvod By: .	Racelvod By: 5
ering.	5 455	information	Project Name	Strong	19107 KHITE		oS4S Client Purt	Sampler(s) Name(s) 10/0 - Phone # Project Manager		MEOH/DI Vial #			-							-		Turn Around Time (Business Davs)	Approved B	-	- Application and the state of		a Control of the Cont		F 7/31/19 1900	Dato I Time:	Date / Time:
		Cilent / Reporting Information	ENDE PHIA DISTICT	reel Address	Ny Tai PA	9	15-656-(c	amplar(s) Name(s)		sas emeta # Field ID / Point of Collection	1 WA-15	2 WA-23	3 WA.3S	1 WA-4S	1 WA-55	20 - ACJ 7	1 WA-75	1-PR-15	1 PR-25	16 PR. 35	11 PR-45	Tuc		10 Business Days	3 Business Days	2 Business Days	1 t Businoss Day*	All data avellable via Lablink	Relinquish day:	Relinquished by:	Ratinguished by:

Page 9 of 9



Dayton, NJ

3 6.	
N/1100	Horme
WIISC.	Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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CHAIN OF CUSTODY

Page	1	of	1
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		GS North America Inc Dayton	FED-EX Tracking #	Bothe Order Corner I
		2235 Route 130, Dayton, NJ 08810	_	TM-071719-102
	iet.	732-329-0200 FAX: 732-329-3499/3480 www.sqs.com/ehsusa	SGS Quote #	\$G\$ Job #
Cilent / Reporting Information	Proje	ct Information	C Brance	1 30-12-300
Company Name:	Project Name:	C. Intervitation	Requeste	ed Analysis Mairix Codes
USACE - Phila . District	USACE Reser	poirs - Prompton	Reide So	DW - Drinking Water GW - Ground Water
		Billing information (if different from Report to)		WW - Water SW - Surface Water SO - Soil
Dhila PA 19107	Prompte N PA	Company Name	M M C M S M S M S M S M S M S M S M S M	St Shrige SED-Sediment
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Phone #	Client Purchase Order 1 .	City Slete		SOL - Other Solid WP - Wipe
315-65(o - 0545 Samplerte) Name(a) 610 Phone #		Attention	- Jos 4	FB - Fleid Blank EB-Equipment Blank
C = 00 /10 = 0.14 COTT O.78	Project Manager	Attender		RB - Rinse Blank
Greg Wack 597-9780	I ammy Michoshy	n Number of preserved Br	기계 이 시	TB - Trip Skarsk
sas service Field ID / Point of Collection	MEOH/DI Visil # Date Time			LAB USE ONLY
1F PR-IS	731/19/1205	14/6 SW 9 X X	$ \times \times \times \times $	
24 PR. 25	1 / 1:00	/ G Sw 9 X X	XXXX	1 65
3F PR-am	1:07	1 G Sc0 9 X X	XXXX	1111100
UF PR. AD	1:00	G Sw 9 X X	XXXX	118 72
SF PR-35	l lays	G SA 9 X X	XXXX	1 1 1 1 KBAS
5f PR-35 6f PR-3m	1345	1 6 Sw 9 7 X	XXXX	11444
25 PR. 3D	1 245	1 G 500 9 X X	XXXX	
75 PR. 3D 85 PR. 45	1145	1 1 27 1 2 2 3 1 1 1 1 1 1 1 1 1 1	XXXX	
01-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	1 1 1		+++	+++++
	<u> </u>		+++	
Turn Around Time (Bu	isiness Days)	Deliverable		Comments / Special Instructions
	Approved By (SGS PM): / Date:	Commercial "A" (Level 1) NYASP Ca	agory A DOD-QSMS	
10 Susinoss Days		Commercial "B" (Level 2) NYASP Car	agory B	FFCF Samples TO
Business Days INITIAL AS	ESSMENT_LATA	NJ Reduced (Lovel 3) MA MCP C	iteria	N 106
3 Business Days*		Full Tier I (Lavel 4) CT RCP C	itoris	WHO I'VE
2 Business Days* LABEL VER	RIFICATION	Commercial "C" State Form		0 1 1/0 70
1 Business Day*		NJ DKQP EDO Forms	TPO	y sampus, 10
Other 7		Commercial "A" = Results only; Commercial	"B" = Results + QC Summery	FFCF Samples TO rofin lab. y samples To 5 Reider lab
All data avellatible you Lablink App	Provet needed for 1-3 Business Day TAT	Commercial "C" = Results + OC Summer nust be decumented below each time semples change posses		http://www.sqs.com/en/terms-and-conditions
Prolinguished by: 7 Date / Time		77: 10 1 Reginquisted by:	15.10 photone	Received By:
/ / /////	- V-V-V-V-V-V-V-V-V-V-V-V-V-V-V-V-V-V-V	-112111-1124 12Ch	115/1/9 1845	2 /state
Relinquished by Sato / Tim	ne: Roselved By:	Rolloquished By:	Data / Time:	Recolved By:
Relinquished by: Date / Tim	Received By:	Custody Soal #	Intact Preserved where applicable	On Ice Cooler Tomp. *C

CIP 32383833 37

JC92500X: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number:	JC92500	Client: L	USACE-PHILAD	ILADELPHIA DISTRICT PHILADELPHIA DISTRICT, RESERV			RESERVO	OIR SAMPL	
Date / Time Received:	7/31/2019 6:45:00	PMI	Delivery Metho	d:	Airbill #'s:				
. ,	•	, ,	, ,	,	,); Cooler 5: (3.8); Cooler 6:		, ,	
Cooler Temps (Corr	ected) °C: Coole	er 1: (3.6);	Cooler 2: (3.7);	Cooler 3: (3	3.7); Cooler 4: (3.7); Cooler 5: (3.7); Cooler 6:	(3.6); Coole	er 7: (3.8);	
Cooler Security	Y or N		<u>Y</u>	or N	Sample Integrity	y - Documentation	<u>Y</u> 0	or N	
1. Custody Seals Present:		3. COC Pre	esent:		1 Sample labels	oresent on bottles:	~		
2. Custody Seals Intact:	✓	Smpl Dates	/Time OK		Container label		V		
Cooler Temperature	Y or N	_				ner label / COC agree:	~		
Temp criteria achieved:	✓]			Sample Integrit	v - Condition	<u>Y</u> 0	or N	
2. Cooler temp verification:	IR Gun				Sample recvd v	-	V		
3. Cooler media:	Ice (Bag)			All containers a		_ _		
4. No. Coolers:	7				3. Condition of sa	mple:	_	tact	
Quality Control Preserv	ation Y or M	N/A			Sample Integrit	y - Instructions	Υo	or N	M/A
1. Trip Blank present / cool	er: 🗌 🖺	~			Analysis reque	<u>- </u>	<u> </u>		
2. Trip Blank listed on COC	: 🗆 🗆	✓				ed for unspecified tests		✓	
3. Samples preserved prop	erly: 🗸]				me recvd for analysis:	<u> </u>		
4. VOCs headspace free:					Compositing in	•			\checkmark
·		_			5. Filtering instru	ctions clear:			V
Test Strip Lot #s:	pH 1-12:	229517	r	оН 12+:	208717	Other: (Specify)			
Comments									
SM089-03									
Rev. Date 12/7/17									

JC92500X: Chain of Custody

Page 2 of 2



Dayton, NJ 08/14/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

Prompton

SGS Job Number: JC92500XA

Sampling Date: 07/31/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 17

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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EHS.US.CustomerCare@sgs.com

1 of 17

Sections:

-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	5
Section 3: Misc. Forms	15
3.1: Chain of Custody	16



Sample Summary

USACE-Philadelphia District

Job No: JC92500XA

Philadelphia District, Reservoir Sampling Project No: Prompton

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC92500-1F	07/31/19	12:05 GW	07/31/19	AQ	Surface H2O Filtered	PR-1S
JC92500-1XA	07/31/19	12:05 GW	07/31/19	AQ	Surface Water	PR-1S
JC92500-2F	07/31/19	13:00 GW	07/31/19	AQ	Surface H2O Filtered	PR-2S
JC92500-2XA	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2S
JC92500-3F	07/31/19	13:00 GW	07/31/19	AQ	Surface H2O Filtered	PR-2M
JC92500-3XA	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2M
JC92500-4F	07/31/19	13:00 GW	07/31/19	AQ	Surface H2O Filtered	PR-2D
JC92500-4XA	07/31/19	13:00 GW	07/31/19	AQ	Surface Water	PR-2D
JC92500-5F	07/31/19	12:45 GW	07/31/19	AQ	Surface H2O Filtered	PR-3S
JC92500-5XA	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3S
JC92500-6F	07/31/19	12:45 GW	07/31/19	AQ	Surface H2O Filtered	PR-3M
JC92500-6XA	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3M
JC92500-7F	07/31/19	12:45 GW	07/31/19	AQ	Surface H2O Filtered	PR-3D



Sample Summary (continued)

USACE-Philadelphia District

JC92500XA Job No:

Philadelphia District, Reservoir Sampling Project No: Prompton

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC92500-7XA	07/31/19	12:45 GW	07/31/19	AQ	Surface Water	PR-3D
JC92500-8F	07/31/19	11:45 GW	07/31/19	AQ	Surface H2O Filtered	PR-4S
JC92500-8XA	07/31/19	11:45 GW	07/31/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis



Certificate of Analysis

Laboratory No.: 9026970 **Report:** 08/06/19

Project: Army Corp Reservoirs

Lab Contact: Richard A Wheeler

Attention: Tammy McCloskey

Reported To: SGS North America

2235 US Highway 130 Dayton, NJ 08810

Lab ID: 9026970-01 **Collected By:** Client **Sampled:** 07/31/19 12:05 **Received:** 08/02/19 09:40

Sample Desc: PR-1S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	08/05/19	J	JCL

Lab ID: 9026970-02 **Collected By:** Client **Sampled:** 07/31/19 13:00 **Received:** 08/02/19 09:40

Sample Desc: PR-2S Sample Type: Grab

				Rep.						
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst		
Dissolved General Chemistry										
Phosphorus as P,	0.008	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, J	JCL		
Dissolved										
General Chemistry										
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.05	SM 4500-P E	08/05/19	U	JCL		

Lab ID: 9026970-03 **Collected By:** Client **Sampled:** 07/31/19 13:00 **Received:** 08/02/19 09:40

Sample Desc: PR-2M Sample Type: Grab

				Rep.						
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst		
Dissolved General Chemistry										
Phosphorus as P,	0.009	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, J	JCL		
Dissolved										
General Chemistry										
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.05	SM 4500-P E	08/05/19	U	JCL		



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Page 1 of 9



M.J. Reider Associates, Inc.

Lab ID: 9026970-04 **Collected By:** Client **Sampled:** 07/31/19 13:00 **Received:** 08/02/19 09:40

Sample Desc: PR-2D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analvzed	Notes	Analyst
Dissolved General Chemist		OIII			Troccuure	Time, Zea	11000	. mary oc
Phosphorus as P, Dissolved	0.01	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.03	mg/l	0.01	0.05	SM 4500-P E	08/05/19	J	JCL

Lab ID: 9026970-05 **Collected By:** Client **Sampled:** 07/31/19 12:45 **Received:** 08/02/19 09:40

Sample Desc: PR-3S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	08/05/19	J	JCL

Lab ID: 9026970-06 **Collected By:** Client **Sampled:** 07/31/19 12:45 **Received:** 08/02/19 09:40

Sample Desc: PR-3M Sample Type: Grab

				Rep.						
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst		
Dissolved General Chemistry										
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, U	JCL		
General Chemistry										
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	08/05/19	J	JCL		

Lab ID: 9026970-07 **Collected By:** Client **Sampled:** 07/31/19 12:45 **Received:** 08/02/19 09:40

Sample Desc: PR-3D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.06	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11	JCL
General Chemistry								
Phosphorus as P, Total	0.09	mg/l	0.01	0.05	SM 4500-P E	08/05/19		JCL



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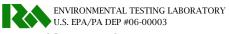
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Page 2 of 9





M.J. Reider Associates, Inc.

Lab ID: 9026970-08 **Collected By:** Client **Sampled:** 07/31/19 11:45 **Received:** 08/02/19 09:40

Sample Desc: PR-4S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	08/05/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.03	mg/l	0.01	0.05	SM 4500-P E	08/05/19	J	JCL

Quality Control

General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9H0202								
MB (B9H0202-BLK1)				Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
LFM (B9H0202-MS1)		Source: 9026970-06		Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Total	1.01	0.05	mg/l	98.9	80-120			
LFMD (B9H0202-MSD1)		Source: 9026970-06		Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Total	1.01	0.05	mg/l	99.1	80-120	0.198	20	

Dissolved General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9H0203			0.000	,				
MB (B9H0203-BLK1)				Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
LFB (B9H0203-BS1)				Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Dissolved	1.00	0.05	mg/l	100	80-120			G-11
LFM (B9H0203-MS1)		Source: 9026970-01		Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Dissolved	1.01	0.05	mg/l	101	80-120			
LFMD (B9H0203-MSD1)		Source: 9026970-01		Prepared & Ana	alyzed: 08/05/20	19		
Phosphorus as P, Dissolved	1.00	0.05	mg/l	100	80-120	0.498	20	



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Page 3 of 9



Preparation Methods

Specific Method	Preparation Method	Prepared Date	Prepared By
9026970-01			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-02			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-03			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-04			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-05			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-06			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-07			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL
9026970-08			
SM 4500-P E	SM 4500-P B	08/05/2019	JCL

Notes and Definitions

G-11 The sample was filtered after it was received at the laboratory.

J Estimated value

U Analyte was not detected above the indicated value.



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Page 4 of 9



(5 of 9)
	Page !	_

Recid temp 1.9°C ___ iter SED-Sediment
OI-Oi
LIQ-Other Liquid
AR - Air
SOL-Other Sold
WP - Wipe
FB - Field Blank
EB-Equipment Blank
TB - Trip Blank
TB - Trip Blank LAB USE ONLY PM: RAW Comments / Special Instructions 을 다 Army Corp Reservoirs SGS North America 9026970 Preserved where applicable Date / Time; Date / Time: including courier delivery. , 40qT × × Intact Not intact NYASP Category A
NYASP Category B
State Forms
EDD Format
X Other REDT2 ENCOSE WEOH DI Matel BNON Billing Information (If different from Report to) Company Name *OS*H CONH Custody Seal # SGS North America Inc. - Dayton 2235 Route 130, Dayton, NJ 08810 TEL. 732-329-0200 FAX: 732-329-3499/3480 Commercial "A" (Level 1)

Commercial "B" (Level 2)

FULT1 (Level 3+4)

NJ Reduced

Commercial "C" HOBN нсі Philadelphia District, Reservoir Sampling # of botfles Matrox ΑQ ΑQ ΑQ Ā ΑQ ð AQ AQ Ą ΑĠ Ą Ä Project Information Street Address 12:45:00 PM GW βW 12:05:00 PM GW 12:05:00 PM GW βW Ø βW βW ĕ 1:00:00 PM GW βW 12:45:00 PM GW 12:45:00 PM 1:00:00 PM 1:00:00 PM 12:45:00 PM 1:00:00 PM 1:00:00 PM 1:00:00 PM State 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 7/31/19 Date Received By: Received By: Approved By (SGS PM): / Date: Client Purchase Order # B 200 602 Project Manager MEOH/DI VIsi # ş 0 ŝ Date / Time: Client / Reporting Information Turnaround Time (Business days) Field ID / Point of Collection ammy.mccloskey@sgs.com Relinguished by: Sampler(s) Name(s) GW PR-2M PR-2D PR-3M PR-3M PR-1S PR-1S PR-2S PR-2S PR-2M PR-2D PR-3S PR-3S Relinquished by: Relinquished by: Company Name: 1X 938 Sample # Ļ 2XA 2F 3X.A 3F ¥X 4 5XA 9F 6XA 9

Page 1 of 2

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Page 2 of 2

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7F PF	PR-3D	,	ري ا	7/31/19	12:45:00 PM	0W	AQ					×									
8XA P	PR-4S	/	-	7/31/19	11:45:00 AM	9W	ΑQ						×		L						
9F	PR-4S	1	20%	7/31/19	11:45:00 AM	Β	Aa					×			<u> </u>					Τ	
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	Standard 10 Business Days			-			Commercial "B" (Level 2)	B" (Level)		\ \[\]	NYASP Category B	N B									
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Page 7 of 9

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Date / Time: 8/1/2019 10:28:32 AM

BETHW CSR:

JC92500XA Job #:

Client Project: Philadelphia District, Reservoir Sampling

REDT2 Deliverable: Due 8/14/2019 TAT:

Sub Lab: MJ Reider Associates Inc, Env. Testing Laboratories

Address: 107 Angelica Street

City: Reading State: PA

Zip: 19611

Contact: Sample Receiving / Rich Wheeler Phone: 610-374-5129

Alianot																
Time	11:45:00 AM	12:05:00 PM	12:05:00 PM	1:00:00 PM	1:00:00 PM	1:00:00 PM	1:00:00 PM	1:00:00 PM	1:00:00 PM	12:45:00 PM	12:45:00 PM	12:45:00 PM	12:45:00 PM	12:45:00 PM	12:45:00 PM	11:45:00 AM
Date Sampled	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019	7/31/2019
Sampled Bv	NO NO	<u>GW</u>	<u>GW</u>	<u>GW</u>	<u>GW</u>	GW	<u>GW</u>	<u>GW</u>	<u>GW</u>	<u>GW</u>	<u>R</u>	<u>GW</u>	<u>GW</u>	- MB	<u>GW</u>	<u>GW</u>
Location																
Analysis	FILTERGN, TPO4.	TP04.	FILTERGN TP04.	TP04.	FILTERGN, TPO4.	TP04.	FILTERGN, TPO4.	TP04,	FILTERGN, TPO4.	TPO4	FILTERGN, TPO4.	TPO4.	FILTERGN, TPO4,	TP04.	FILTERGN TPO4.	TPO4.
Client Sample Description	PR-4S	PR-1S	PR-1S	PR-2S	<u>PR-2S</u>	PR-2M	<u>PR-2M</u>	<u>PR-2D</u>	<u>PR-2D</u>	PR-3S	PR-3 <u>S</u>	<u>PR-3M</u>	<u>PR-3M</u>	<u>PR-3D</u>	<u>PR-3D</u>	PR-4S
SGS Sample #	JC92500-8F	JC92500-1XA	JC92500-1E	JC92500-2XA	JC92500-2E	JC92500-3XA	JC92500-3E	JC92500-4XA	JC92500-4F	JC92500-5XA	JC92500-5F	JC92500-6XA	JC92500-6F	JC92500-7XA	JC92500-7E	JC92500-8XA

0122206

Date:

Δ

Sample Management Receipt:

Comments:

SGS

M.J. Reider Associates, Inc.

MJRA Terms & Conditions

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

Sample Submission, Sample Acceptance & Sampling Containers

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

Turnaround Times (TAT)

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. *RUSH TAT Surcharges are applied for expedited turnaround times.

Analytical Results, Sample Collection Integrity & Subcontracting

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

Payment Terms

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

Warranty & Litigation

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:

Richard A Wheeler Director of Field Services



107 Angelica Street O Reading, PA 19611 O www.mjreider.com O (610) 374-5129 O fax (610) 374-7234

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NELAP accredited by PA. (PADEP #06-00003) Visit our website to view our current

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

Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 9 of 9





Dayton, NJ

Misc. Forms
Custody Documents and Other Forms
Includes the following where applicable:
• Chain of Custody

	SGS	SM		SC	S Nor 235 Ro 32-329	th Ame ute 130, -0200 F	CUST rica Inc Dayton, NJ AX: 732-32 com/ehsusa	Dayt 0881 9-3499	on 0					FED-EX	Tracking ole #					Bothe O	rder Coms		_ of _ 071	1 719-102 500
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14 Cooler Tomp. 12 Cooler Tomp

JC92500XA: Chain of Custody Page 1 of 2

SGS Sample Receipt Summary

Job Number:	JC9250	0	CI	ient:	USACE-PI	HILAD	DELPHIA	DISTRICT	Project: PHILADELPHIA	DISTRICT	, RESEF	RVOIR	SAMPL
Date / Time Received:	7/31/20	19 6:	45:00 PM	_	Delivery I	/letho	d:		Airbill #'s:				
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 Custody Seals Present: Custody Seals Intact: 	<u>v</u>				es/Time OK	✓		Sample labels Container label	present on bottles:	✓		_	
Cooler Temperature		Υ	or N						ner label / COC agree:	✓			
Temp criteria achieved: Cooler temp verification Cooler media: No. Coolers:		✓	R Gun ee (Bag)					Sample Integri 1. Sample recvd 2. All containers a 3. Condition of sa	within HT: accounted for:	Y ✓ ✓	or N		
Quality Control Preserv	<u>vation</u>	<u>Y</u>	or N	N/A	<u>.</u>			Sample Integri	ty - Instructions	Υ	or N	N	/ A
Trip Blank present / coc Trip Blank listed on COc Samples preserved pro	C:			y				Analysis require Bottles receive	-	V	□ ⊻		_
4. VOCs headspace free:	. ,			✓					nstructions clear:				✓
								5. Filtering instru	uctions clear:				✓
Test Strip Lot #s:	pH 1-	12:	229	517			pH 12+:	208717	Other: (Specify)				
Comments													
SM089-03													

SM089-03 Rev. Date 12/7/17

JC92500XA: Chain of Custody

Page 2 of 2



Dayton, NJ 09/10/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC93721

Sampling Date: 08/22/19



Army Corps of Engineers

joseph.m.loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 22

TNI FORATORA

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 s or modifications to this document.

Please share your ideas about

Sections:

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	
Section 4: Sample Results	10
4.1: JC93721-1: PR-1S	11
4.2: JC93721-2: PR-2S	12
4.3: JC93721-3: PR-2M	13
4.4: JC93721-4: PR-2D	14
4.5: JC93721-5: PR-3S	15
4.6: JC93721-6: PR-3M	16
4.7: JC93721-7: PR-3D	17
4.8: JC93721-8: PR-4S	18
Section 5: Misc. Forms	19
5.1: Chain of Custody	20

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Sample Summary

USACE-Philadelphia District

Job No:

JC93721

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC93721-1	08/22/19	10:00 GW	08/22/19	AQ	Surface Water	PR-1S
JC93721-2	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2S
JC93721-3	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2M
JC93721-4	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2D
JC93721-5	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3S
JC93721-6	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3M
JC93721-7	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3D
JC93721-8	08/22/19	10:10 GW	08/22/19	AQ	Surface Water	PR-4S

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District Job No JC93721

Site: Philadelphia District, Reservoir Sampling Report Date 9/6/2019 9:49:54 AM

On 08/22/2019, 8 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.7 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC93721 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ Batch ID: GP23422

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93721-1DUP, JC93721-1MS were used as the QC samples for Nitrogen, Total Kjeldahl.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ Batch ID: GP23451

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Friday, September 06, 2019

■ Sample(s) JC93721-1DUP, JC93721-1MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

4 of 22

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ Batch ID: R180755

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180756

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180757

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-3 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180758

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180759

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180760

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-6 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180761

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-7 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R180762

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93721-8 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

General Chemistry By Method SM2320 B-11

Matrix: AQ Batch ID: GN99401

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Friday, September 06, 2019

- Sample(s) JC93941-1DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC93721-8 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC93721-5 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC93721-1 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC93721-2 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC93721-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC93721-6 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC93721-7 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC93721-3 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

General Chemistry By Method SM2540 C-11

Matrix: AQ Batch ID: GN99256

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93721-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM2540 D-11

Matrix: AQ Batch ID: GN99252

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93721-1DUP were used as the QC samples for Solids, Total Suspended.
- JC93721-4 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC93721-3 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 300 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC93721-7 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC93721-1 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 550 mL of sample. Volume was reduced from 1 liter due to limited volume.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ Batch ID: GP23445

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93721-1DUP, JC93721-1MS, JC93721-1MSD were used as the QC samples for Nitrogen, Ammonia.

General Chemistry By Method SM4500NO2 B-11

Matrix: AO Batch ID: GN99045

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93690-1DUP, JC93690-1MS were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AO Batch ID: GP23227

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93721-1DUP were used as the QC samples for BOD, 5 Day.
- JC93721-1 for BOD, 5 Day: DO depletion less than 2.
- JC93721-8 for BOD, 5 Day: DO depletion less than 2.
- JC93721-4 for BOD, 5 Day: DO depletion less than 2.

General Chemistry By Method SM5310 B-11

Matrix: AQ Batch ID: GP23425

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93721-1MS, JC93721-1MSD were used as the QC samples for Total Organic Carbon.

Friday, September 06, 2019

Page 3 of 4

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Friday, September 06, 2019

Summary of Hits Job Number: JC93721

USACE-Philadelphia District Account:

Philadelphia District, Reservoir Sampling 08/22/19 **Project:**

Collected:

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL MDL	Units	Method
JC93721-1 PR-1S				
BOD, 5 Day ^a	1.1	1.0	mg/l	SM5210 B-11
Nitrogen, Nitrate b	0.16	0.11	mg/l	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.16	0.10	mg/l	EPA 353.2/LACHAT
Nitrogen, Total Kjeldahl	0.26	0.20	mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	68.0	10	mg/l	SM2540 C-11
Total Organic Carbon	2.2	1.0	mg/l	SM5310 B-11
JC93721-2 PR-2S				
Alkalinity, Total as CaCO3 ^c	31.0	10	mg/l	SM2320 B-11
BOD, 5 Day	6.7	1.0	mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	1.2	0.20	mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	61.0	10	mg/l	SM2540 C-11
Solids, Total Suspended	11.0	4.0	mg/l	SM2540 D-11
Total Organic Carbon	4.6	1.0	mg/l	SM5310 B-11
JC93721-3 PR-2M				
Alkalinity, Total as CaCO3 ^c	25.0	5.0	ma/1	CM2220 D 11
BOD, 5 Day	4.8	1.0	mg/l mg/l	SM2320 B-11 SM5210 B-11
Nitrogen, Total Kjeldahl	1.1	0.20	mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	61.0	10	mg/l	SM2540 C-11
Solids, Total Suspended ^d	8.0	4.0	mg/l	SM2540 D-11
Total Organic Carbon	4.2	1.0	mg/l	SM5310 B-11
JC93721-4 PR-2D			-	
Alkalinity, Total as CaCO3 ^c	32.0	5.0	mg/l	SM2320 B-11
BOD, 5 Day ^a	1.3	1.0	mg/l	SM5210 B-11
Nitrogen, Ammonia	0.27	0.20	mg/l	SM4500NH3 H-11LACHAT
Nitrogen, Total Kjeldahl	0.56	0.20	mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	52.0	10	mg/l	SM2540 C-11
Solids, Total Suspended ^e	6.0	4.0	mg/l	SM2540 D-11
Total Organic Carbon	3.2	1.0	mg/l	SM5310 B-11
JC93721-5 PR-3S				
Alkalinity, Total as CaCO3 ^c	26.0	5.0	mg/l	SM2320 B-11
BOD, 5 Day	5.4	1.0	mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	0.65	0.20	mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	50.0	10	mg/l	SM2540 C-11
Solids, Total Suspended	7.5	4.0	mg/l	SM2540 D-11
Total Organic Carbon	4.6	1.0	mg/l	SM5310 B-11

Summary of Hits Job Number: JC93721

Account: USACE-Philadelphia District

Project: Philadelphia District, Reservoir Sampling

Collected: 08/22/19

Lab Sample ID Client Sample II Analyte	D Result/ Qual	RL	MDL	Units	Method
JC93721-6 PR-3M					
Alkalinity, Total as CaCO3 ^c	22.0	5.0		mg/l	SM2320 B-11
BOD, 5 Day	4.8	1.0		mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	0.51	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	51.0	10		mg/l	SM2540 C-11
Solids, Total Suspended	4.0	4.0		mg/l	SM2540 D-11
Total Organic Carbon	3.7	1.0		mg/l	SM5310 B-11
JC93721-7 PR-3D					
Alkalinity, Total as CaCO3 ^c	59.0	5.0		mg/l	SM2320 B-11
BOD, 5 Day	7.6	1.0		mg/l	SM5210 B-11
Nitrogen, Ammonia	1.4	0.20		mg/l	SM4500NH3 H-11LACHAT
Nitrogen, Total Kjeldahl	1.7	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	67.0	10		mg/l	SM2540 C-11
Solids, Total Suspended f	18.0	4.0		mg/l	SM2540 D-11
Total Organic Carbon	6.3	1.0		mg/l	SM5310 B-11
JC93721-8 PR-4S					
Alkalinity, Total as CaCO3 c	25.5	5.0		mg/l	SM2320 B-11
BOD, 5 Day a	1.0	1.0		mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	0.48	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	48.0	10		mg/l	SM2540 C-11
Solids, Total Suspended	12.2	4.0		mg/l	SM2540 D-11
Total Organic Carbon	3.3	1.0		mg/l	SM5310 B-11

- (a) DO depletion less than 2.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Sample was titrated to a final pH of 4.5.
- (d) Reported sample aliquot obtained from filtration of 300 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- (e) Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- (f) Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.



Dayton, NJ

Section 4

Sample Results	
Report of Analysis	

Report of Analysis

Client Sample ID: PR-1S Lab Sample ID: JC93721-1

Lab Sample ID:JC93721-1Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	< 5.0	5.0	mg/l	1	08/28/19 15:41	UP	SM2320 B-11
BOD, 5 Day b	1.1	1.0	mg/l	1	08/23/19 22:19		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/05/19 15:52	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^c	0.16	0.11	mg/l	1	09/05/19 12:08	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.16	0.10	mg/l	1	09/05/19 12:08	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:22	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.26	0.20	mg/l	1	09/04/19 14:43	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	68.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended ^d	< 4.0	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	2.2	1.0	mg/l	1	09/04/19 22:41	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.2.
- (b) DO depletion less than 2.
- (c) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (d) Reported sample aliquot obtained from filtration of 550 mL of sample. Volume was reduced from 1 liter due to limited volume.

Report of Analysis

Client Sample ID: PR-2S Lab Sample ID: JC93721-2

Lab Sample ID:JC93721-2Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	31.0	10	mg/l	1	08/28/19 15:41	UP	SM2320 B-11
BOD, 5 Day	6.7	1.0	mg/l	1	08/23/19 22:21	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/05/19 15:53	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/05/19 12:09	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:09	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:45	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.2	0.20	mg/l	1	09/04/19 14:43	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	61.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	11.0	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	4.6	1.0	mg/l	1	09/04/19 23:22	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Page 1 of 1

Report of Analysis

Client Sample ID: PR-2M Lab Sample ID: JC93721-3

Lab Sample ID:JC93721-3Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
					00/20/40 42 44		
Alkalinity, Total as CaCO3 ^a	25.0	5.0	mg/l	1	08/28/19 15:41	UP	SM2320 B-11
BOD, 5 Day	4.8	1.0	mg/l	1	08/23/19 22:24	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/05/19 15:55	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^b	< 0.11	0.11	mg/l	1	09/05/19 12:10	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:10	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:45	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.1	0.20	mg/l	1	09/04/19 14:44	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	61.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended ^c	8.0	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	4.2	1.0	mg/l	1	09/04/19 23:34	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 300 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Page 1 of 1

4

Report of Analysis

Client Sample ID: PR-2D Lab Sample ID: JC93721-4

Lab Sample ID:JC93721-4Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	32.0	5.0	mg/l	1	08/28/19 15:41	ПD	SM2320 B-11
BOD, 5 Day b	1.3	1.0	mg/l	1	08/23/19 22:26		SM5210 B-11
Nitrogen, Ammonia	0.27	0.20	mg/l	1	09/05/19 15:56	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^c	< 0.11	0.11	mg/l	1	09/05/19 12:11	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:11	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:45	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.56	0.20	mg/l	1	09/04/19 14:47	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	52.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended ^d	6.0	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	3.2	1.0	mg/l	1	09/04/19 23:45	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) DO depletion less than 2.
- (c) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (d) Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-3S Lab Sample ID: JC93721-5

Lab Sample ID:JC93721-5Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	26.0	5.0	mg/l	1	08/28/19 15:41	UP	SM2320 B-11
BOD, 5 Day	5.4	1.0	mg/l	1	08/23/19 22:29	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/05/19 16:48	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/05/19 12:12	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:12	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:45	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.65	0.20	mg/l	1	09/04/19 14:48	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	50.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	7.5	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	4.6	1.0	mg/l	1	09/04/19 23:56	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Page 1 of 1

Report of Analysis

Client Sample ID: PR-3M Lab Sample ID: JC93721-6

Lab Sample ID:JC93721-6Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	22.0	5.0	mg/l	1	08/28/19 16:33	UP	SM2320 B-11
BOD, 5 Day	4.8	1.0	mg/l	1	08/23/19 22:30	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/05/19 15:59	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/05/19 12:16	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:16	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:45	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.51	0.20	mg/l	1	09/04/19 14:49	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	51.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	4.0	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	3.7	1.0	mg/l	1	09/05/19 00:07	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Page 1 of 1

Report of Analysis

Client Sample ID: PR-3D Lab Sample ID: JC93721-7

Lab Sample ID:JC93721-7Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	59.0	5.0	mg/l	1	08/28/19 16:33	ПD	SM2320 B-11
BOD, 5 Day	7.6	1.0	mg/l	1	08/23/19 22:32		SM5210 B-11
Nitrogen, Ammonia	1.4	0.20	mg/l	1	09/05/19 16:00	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/05/19 12:17	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:17	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 22:45	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.7	0.20	mg/l	1	09/04/19 14:49	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	67.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended ^c	18.0	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	6.3	1.0	mg/l	1	09/05/19 00:41	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-4S Lab Sample ID: JC93721-8

Lab Sample ID:JC93721-8Date Sampled:08/22/19Matrix:AQ - Surface WaterDate Received:08/22/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	25.5	5.0	mg/l	1	08/28/19 16:33	UP	SM2320 B-11
BOD, 5 Day ^b	1.0	1.0	mg/l	1	08/23/19 22:34	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/05/19 16:02	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^c	< 0.11	0.11	mg/l	1	09/05/19 12:18	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/05/19 12:18	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/22/19 23:05	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.48	0.20	mg/l	1	09/04/19 14:50	BM	EPA 351.2/LACHAT
Solids, Total Dissolved	48.0	10	mg/l	1	08/28/19 15:00	RC	SM2540 C-11
Solids, Total Suspended	12.2	4.0	mg/l	1	08/28/19 10:43	RC	SM2540 D-11
Total Organic Carbon	3.3	1.0	mg/l	1	09/05/19 00:52	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) DO depletion less than 2.

⁽c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)



Misc. Forms

Dayton, NJ

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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JC93721: Chain of Custody Page 1 of 3

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EHSA-QAC-0023-02-FORM-Dayton - Standard COC.xlsx

JC93721: Chain of Custody Page 2 of 3

SGS Sample Receipt Summary

Job Number: JC937	21 Client: US	SACE-PHILADELPHIA DIST	TRICT Project: PHILADELPHIA D	ISTRICT, RESERVOIR SAMPL
Date / Time Received: 8/22/2	019 4:48:00 PM De	elivery Method:	Airbill #'s:	
Cooler Temps (Raw Measured Cooler Temps (Corrected	•			
Cooler Security 1. Custody Seals Present: 2. Custody Seals Intact: Cooler Temperature 1. Temp criteria achieved: 2. Cooler temp verification: 3. Cooler media: 4. No. Coolers:	or N	ent: 🔽 🗌	Sample Integrity - Documentation 1. Sample labels present on bottles: 2. Container labeling complete: 3. Sample container label / COC agree: Sample Integrity - Condition 1. Sample recvd within HT: 2. All containers accounted for: 3. Condition of sample:	Y or N ✓ □ ✓ □ ✓ □ ✓ □ ✓ □ ✓ □ ✓ □ ✓
Quality Control Preservation 1. Trip Blank present / cooler: 2. Trip Blank listed on COC: 3. Samples preserved properly: 4. VOCs headspace free:	Y or N N/A □ ✓ □ □ ✓ □ ✓ □ ✓ □ ✓ □ ✓ □		Sample Integrity - Instructions 1. Analysis requested is clear: 2. Bottles received for unspecified tests 3. Sufficient volume recvd for analysis: 4. Compositing instructions clear: 5. Filtering instructions clear:	Y or N N/A V
Test Strip Lot #s: pH 1	-12: 229517	pH 12+:	208717 Other: (Specify)	
Comments SM089-03 Rev. Date 12/7/17				

JC93721: Chain of Custody Page 3 of 3



Dayton, NJ 08/27/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC93721X

Sampling Date: 08/22/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph.M.Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 14

TNI LABORATORA

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 s or modifications to this document.

Please share your ideas about

SGS

Sections:

-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	4
Section 3: Misc. Forms	11
3.1: Chain of Custody	12



Sample Summary

USACE-Philadelphia District

Job No:

JC93721X

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC93721-1X	08/22/19	10:00 GW	08/22/19	AQ	Surface Water	PR-1S
JC93721-2X	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2S
JC93721-5X	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3S
JC93721-8X	08/22/19	10:10 GW	08/22/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis



Analytical Report

Serialized: 08/27/2019 10:57am QC35

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130

DAYTON,NJ 08810

Regarding:

SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

PROJECT ID:

W09769 USACE

LABORATORY REPORT NUMBER:

L7156392

Authorized by: Douglas J. Gump Client Services Manager

DarJU



Eurofins QC, LLC

Analytical Report Printed 08/27/19 10:57 QC35

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

Regarding: KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

	: W09769, SGS NORTH W09769 USACE, USAG		D.	P.O. No:		Inv. No: PWSID No:	1989214 PI
Sample ID L7156392-1	Sample Description PR-1S Received Date/Tin	ne/Temp 08/2	2/19 02:35pm 4.8 C	Iced (Y/N): Y	08/22/19 10:00am NA C Custo		Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	ENTAL MICROBIOL	OGY PR-1	S				
Total Coliform Fecal Coliform		<1 Q 43 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	100 100	1 1	08/22/19 07:28PM LK 08/22/19 03:55PM KC2
Sample ID L7156392-2	Sample Description PR-2S Received Date/Tin	ne/Temp 08/2	2/19 02:35pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 09:10am NA C	Sampled by Customer
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONM	ENTAL MICROBIOL	OGY PR-2	S				
Total Coliform Fecal Coliform	•	1320 E, Q 2 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	08/22/19 07:28PM LK 08/22/19 03:55PM KC2

PIN: 28748 Serial Number: 6540026

Eurofins QC, LLC

Analytical Report

10

10

08/22/19 03:55PM KC2

Account No: W09769, SGS NORTH AMERICA, INC.	P.O. No:	Inv. No:	1989214 PI
Project No: W09769 USACE USACE		PWSID No:	

Samp. Date/Time/Temp Sampled by Sample ID **Sample Description** L7156392-3 PR-3S 08/22/19 08:30am NA C Customer

Received	Date/Time/Temp 08/2	2/19 02:35pm 4.8 C	Iced (Y/N): Y			
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst
ENVIRONMENTAL MICI	ROBIOLOGY PR-3	S				
Total Coliform, MF Fecal Coliform, MF	1320 E, Q <1 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	08/22/19 07:28PM LK 08/22/19 03:55PM KC2

•	Sample Description PR-4S Received Date/Time/Tem	p 08/22/19 02:3	5рт 4.8 С І с		•		Sampled by Customer		
Parameter	Resu		Units	Method	DF	RL	Test Date, Time, Analyst		
ENVIRONME	ENTAL MICROBIOLOGY -	PR-4S							
Total Coliform,	MF >2000	0 Q	cfu/100ml	SM 9222B	1	100	08/22/19 07:28PM LK		

SM 9222D

Sample Comments | Result Qualifiers:

L7156392-1:

Fecal Coliform, MF

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory

cfu/100ml

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7156392-2:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

L7156392-3:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory
- Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.

PIN: 28748 Serial Number: 6540026

90 E, Q

Eurofins QC, LLC

Analytical Report Printed 08/27/19 10:57

Account No: W09769, SGS NORTH AMERICA, INC. P.O. No: Inv. No: 1989214 PI

PWSID No: Project No: W09769 USACE, USACE

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

L7156392-4:

E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory

Page 4 of 6

Q: For microbiological test, this sample was received in an unverified container. Because container lot quality records are not available, the reported result may not be acceptable for regulatory purposes.



PIN: 28748 Serial Number: 6540026



DEFINITIONS

The following terms or abbreviations are used in this report:

Eurofins QC, LLC (EQC)

<	Less than: In conjunction with a numerical value,							
	indicates a concentration less than RL / MDL							
>	Greater than: In conjunction with a numerical value,							
	indicates a concentration greater than RL / MDL							
CFU	Colony Forming Unit							
DF	Dilution Factor (For Microbiology, DF = volume of							
DF	sample tested)							
DRY	Result was reported on a dry weight basis							
MCL	EPA recommended "Maximum Contaminant Level"							
MDL	Method Detection Limit							
MF	Membrane Filtration							
MPN	Most Probable Number							
ND	For odor test: No Odor Observed							
ND	For all other tests: Analyte concentration Not							
ND	Detected greater than the RL / MDL							

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB (µg/L)	Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
PPM (mg/L)	Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation (LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Data Qualifiers

J	Estimated value ≥ MDL, but < RL
T	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
E	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- · All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been
 performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for
 testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly)
 to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing
 results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Zachary Smith (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs	PA: 46-05499	NJ: PA093	NY: 12080	MD: 357
East Rutherford Facility Vineland Facility Wind Gap Facility	State ID- State ID- State ID-	NJ: 02015 NJ: 06005 NJ: PA001			

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Page of	Requested Analysis Matrix Codes	DW - Drnking Water GW - Ground Water		SL-Sudge Subsequent SL-Sediment O-O-O	A - Other Liquid	WP - Wipe WP - Wipe R - Field Blank	o-Legupinens bank RB. Rüse Blank RB. Trip Blank	A PARILLE DAIL								Comments / Special Instructions	Soundles traided	day shirtening of		http://www.ene.com/an/karme.and.conditione		12/9 11 hacely 18 8 20/9 12,1	Received By:	applicable On Ice Cooler Tengo. 'C	
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CHAIN OF CUSTODY SGS North America Inc Dayton 2235 Route 130, Dayton, NJ 08810 TEL. 732-2339-2489/3480	Project Information	Prompton Reservoir	Billing Information (if different from Report to)	Company Name	Street Address	City	Attention:	Sampled Grab (0) # of Post (1) # of Post (2)	Ro 6 500 A	16 G AN	(C SW	10 G SW 3					Commercial 'B" (Level 2)	NJ Reduced (Level 3)	Commercial "C"		Sample Custody must be documented below each time samples change possession, including courier delivery		Ray A	Cus	
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Page 6 of 6

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Dayton, NJ

Section 3

3	
Misc.	Forms
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Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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JC93721X: Chain of Custody Page 1 of 3

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00 Pean Sq. Eossy	Pron		PA	Billing in Company	format Name	lon (if diff	erent from	Repo	ort to)					닏									WW - Water SW - Surface Water SO - Soil SL- Sludge
Phila. PA 19107 Project Contact Soe Loener	Project #	apron	PH	Street Ad	dress									٦ ا		-							SED-Sediment OI - Oil LIQ - Other Liquid
Phone # 215-1656-6545 Sampler(s) Name(s) (910 - Phone #	Client Purcha	se Order#	City State Zip											700	2								AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank
Sampler(s) Name(s) 410 - Phone #	Project Mana	Moc)	05Ky	Attention									# 8088		1 1								EB-Equipment Blank RB - Rinse Blank TB - Trip Blank
sas Sample # Field ID / Point of Collection	MEOH/DI Viai A	Date	Time	Sampled by	Grab (G)	Matrix	# of	Ş	ГΤ	H So.	NONE	ī	S S	F									-
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EHSA-QAC-0023-02-FORM-Dayton - Standard COC.xlsx

JC93721X: Chain of Custody Page 2 of 3

SGS Sample Receipt Summary

Job Number: JC93	721 Client:	USACE-PHILADELPHIA DIS	TRICT Project: PHILADELPHIA D	ISTRICT, RESERVOIR SAMPL
Date / Time Received: 8/22/2	2019 4:48:00 PM	Delivery Method:	Airbill #'s:	
Cooler Temps (Raw Measured Cooler Temps (Corrected		Cooler 2: (2.6); Cooler 3: (2 Cooler 2: (2.5); Cooler 3: (2		
1. Custody Seals Present: 2. Custody Seals Intact: 2. Cooler Temperature 1. Temp criteria achieved:	or N 3. COC P		Sample Integrity - Documentation 1. Sample labels present on bottles: 2. Container labeling complete: 3. Sample container label / COC agree: Sample Integrity - Condition	Y or N ✓ □ ✓ □ ✓ □ ✓ □ ✓ □
Cooler temp verification: Cooler media: No. Coolers:	IR Gun Ice (Bag)		Sample recvd within HT: All containers accounted for: Condition of sample:	✓ □ ✓ Intact
Quality Control Preservation 1. Trip Blank present / cooler: 2. Trip Blank listed on COC: 3. Samples preserved properly: 4. VOCs headspace free:	Y or N N/A □		Sample Integrity - Instructions 1. Analysis requested is clear: 2. Bottles received for unspecified tests 3. Sufficient volume recvd for analysis: 4. Compositing instructions clear: 5. Filtering instructions clear:	Y or N N/A
Test Strip Lot #s: pH	1-12: 229517	pH 12+:	208717 Other: (Specify)	
Comments				

SM089-03 Rev. Date 12/7/17

JC93721X: Chain of Custody Page 3 of 3



Dayton, NJ 08/29/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC93721XA

Sampling Date: 08/22/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 18



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 Please share your ideas about

Sections:

-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	5
Section 3: Misc. Forms	15
3.1: Chain of Custody	16



Sample Summary

USACE-Philadelphia District

Job No: JC93721XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC93721-1F	08/22/19	10:00 GW	08/22/19	AQ	Surface H2O Filtered	PR-1S
JC93721-1XA	08/22/19	10:00 GW	08/22/19	AQ	Surface Water	PR-1S
JC93721-2F	08/22/19	09:10 GW	08/22/19	AQ	Surface H2O Filtered	PR-2S
JC93721-2XA	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2S
JC93721-3F	08/22/19	09:10 GW	08/22/19	AQ	Surface H2O Filtered	PR-2M
JC93721-3XA	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2M
JC93721-4F	08/22/19	09:10 GW	08/22/19	AQ	Surface H2O Filtered	PR-2D
JC93721-4XA	08/22/19	09:10 GW	08/22/19	AQ	Surface Water	PR-2D
JC93721-5F	08/22/19	08:30 GW	08/22/19	AQ	Surface H2O Filtered	PR-3S
JC93721-5XA	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3S
JC93721-6F	08/22/19	08:30 GW	08/22/19	AQ	Surface H2O Filtered	PR-3M
JC93721-6XA	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3M
JC93721-7F	08/22/19	08:30 GW	08/22/19	AQ	Surface H2O Filtered	PR-3D



Sample Summary (continued)

USACE-Philadelphia District

Job No: JC93721XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC93721-7XA	08/22/19	08:30 GW	08/22/19	AQ	Surface Water	PR-3D
JC93721-8F	08/22/19	10:10 GW	08/22/19	AQ	Surface H2O Filtered	PR-4S
JC93721-8XA	08/22/19	10:10 GW	08/22/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis



Certificate of Analysis

Laboratory No.: 9030179 **Report:** 08/29/19 **Lab Contact:** Amy L Morriss

Project: Army Corp Reservoirs

Attention: Tammy McCloskey

Reported To: SGS North America

2235 US Highway 130 Dayton, NJ 08810

Lab ID: 9030179-01 **Collected By:** Client **Sampled:** 08/22/19 10:00 **Received:** 08/27/19 09:39

Sample Desc: PR-1S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.05	SM 4500-P E	08/28/19	U	JCL

Lab ID: 9030179-02 **Collected By:** Client **Sampled:** 08/22/19 09:10 **Received:** 08/27/19 09:39

Sample Desc: PR-2S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry					•		•
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	08/28/19	J	JCL

Lab ID: 9030179-03 **Collected By:** Client **Sampled:** 08/22/19 09:10 **Received:** 08/27/19 09:39

Sample Desc: PR-2M Sample Type: Grab

				Rep.				
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.009	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	08/28/19	J	JCL



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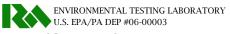
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Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 1 of 9





Lab ID: 9030179-04 **Collected By:** Client **Sampled:** 08/22/19 09:10 **Received:** 08/27/19 09:39

Sample Desc: PR-2D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	try							
Phosphorus as P, Dissolved	0.01	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.06	mg/l	0.01	0.05	SM 4500-P E	08/28/19		JCL

Lab ID: 9030179-05 **Collected By:** Client **Sampled:** 08/22/19 08:30 **Received:** 08/27/19 09:39

Sample Desc: PR-3S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, U	JCL	
General Chemistry									
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.05	SM 4500-P E	08/28/19	U	JCL	

Lab ID: 9030179-06 **Collected By:** Client **Sampled:** 08/22/19 08:30 **Received:** 08/27/19 09:39

Sample Desc: PR-3M Sample Type: Grab

				Rep.					
	Result	Unit	MDL	Limit	Procedure	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, U	JCL	
General Chemistry									
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.05	SM 4500-P E	08/28/19	U	JCL	

Lab ID: 9030179-07 **Collected By:** Client **Sampled:** 08/22/19 08:30 **Received:** 08/27/19 09:39

Sample Desc: PR-3D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.04	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.10	mg/l	0.01	0.05	SM 4500-P E	08/28/19		JCL



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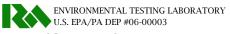
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Page 2 of 9





Lab ID: 9030179-08 **Collected By:** Client **Sampled:** 08/22/19 10:10 **Received:** 08/27/19 09:39

Sample Desc: PR-4S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Procedure	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	0.02	mg/l	0.007	0.05	SM 4500-P E	08/28/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	08/28/19	J	JCL

Quality Control

General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9H1622								
MB (B9H1622-BLK1)				Prepared & Ana	lyzed: 08/28/20	19		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9H1622-BLK2)				Prepared & Ana	llyzed: 08/28/20	19		
Phosphorus as P, Total	< 0.05	0.05	mg/l	•				U
LFB (B9H1622-BS1)				Prepared & Ana	llyzed: 08/28/20	19		
Phosphorus as P, Total	1.01	0.05	mg/l	101	80-120			
LFM (B9H1622-MS1)		Source: 9030179-01		Prepared & Ana	llyzed: 08/28/20	19		
Phosphorus as P, Total	1.00	0.05	mg/l	100	80-120			
LFMD (B9H1622-MSD1)		Source: 9030179-01		Prepared & Ana	llyzed: 08/28/20	19		
Phosphorus as P, Total	0.99	0.05	mg/l	99.2	80-120	1.20	20	

Dissolved General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9H1623	Result	Liiiii	Onto	/ortic	Limits	KI D	Liilli	110163
MB (B9H1623-BLK1)				Prepared & Ana	alyzed: 08/28/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
MB (B9H1623-BLK2)				Prepared & Ana	alyzed: 08/28/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					U
LFB (B9H1623-BS1)				Prepared & Ana	alyzed: 08/28/20	19		
Phosphorus as P, Dissolved	1.00	0.05	mg/l	100	80-120			G-11



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Page 3 of 9



Preparation Methods

Specific Method	Preparation Method	Prepared Date	Prepared By
9030179-01			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-02			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-03			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-04			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-05			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-06			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-07			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL
9030179-08			
SM 4500-P E	SM 4500-P B	08/28/2019	JCL

Notes and Definitions

G-11 The sample was filtered after it was received at the laboratory.

J Estimated value

U Analyte was not detected above the indicated value.



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Page 4 of 9



Page 5 of 9

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CHAIN OF CUS SGS North America Inc. -2235 Route 130, Dayton, NJ TEL. 732-329-0200 FAX: 732-32 www.sgs.com/ehsu

Project Information

Project Name:

Client / Reporting Information Company Name:

9030179 SGS North America

Requested Analysis

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DE GE Billing Information (if different from Report to) Company Name Philadelphia District, Reservoir Sampling Matrix Ą Ä Ä Ā Ą Å Ą Street Address g∖

Client Purchase Order#

Project #

tammy.mccloskey@sgs.com

State

Street Address

Project Manager

Phone

Sampler(s) Name(s) GW

Field ID / Point of Collection

PR-18 1F PR-1S

1X

SGS Sample #

LAB USE ONLY

DW - Drinking Waster OW - Cround Water WW - Water SW - Surface Weter SD - Soil SD - Soil SD - Soil SD - Coll O - Oil LIQ - Oiber Liquid AR - Air SOL - Oiber Soil WP - Wipe F B - Field Blank E B - Equipment Blank E B - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank T - Field Blank

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Supervial Labring. Approval needed for RUSH/Energency TAT

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The figure | Received By | Received By | A perfusion of the perfusio Relinquished By: Custody Seal # Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C" Received By Co. (Second By Co. (Seco

Turnaround Time (Business days

PR-3M

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4F PR-2D 5XA PR-3S SF PR-3S

PR-2M

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http://www.sgs.com/en/terms-and-conditions

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Date / Time:

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Page 6 of 9

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				-	zzsz route 134, Dayton, NJ 08810 TEL. 732-329-0200 FAX: 732-329-3499/3480 www.sgs.com/ehsusa	toute 13u, Dayton, NJ 19-0200 FAX: 732-326 www.sgs.com/ehsusa	Dayton FAX: 73 com/eh	, NJ U86 2-329-34 susa	99/3480			18	SGS Quote #					# dot SDS		200	JC93721XA	-		
		Client / Reporting Information			Project Information	Informa	tion					\parallel				Reduc	Requested Analysis	nalysis				2	Matrix Codes	
	Compa	Company Name:	Project Name:	E	Philadelphia District, Reservoir Sampling	rict, Res	servoir S	ampling														88	- Drinking Wat	* 6
	Street /	Street Address	Street								1											- S	WW - Water SW - Surface Water	5
	Ájj	State Zip	City		State	Company Company	Name	Billing Information (If different from Report to) Company Name	nt from R	eport to)				-									St Sludge SED-Sediment	
	Prolect tam.	Prolect Contact E-mail tammy,mccloskey@sgs.com	Project #			Street Address	dress					T	nl									3 1	Lita - Other Liquid AIR - Air	
	Phone #	*	Client Purchase Order #	Order #		city			State		diZ											Ж	Ot Other Salid WP - Wipe B - Field Blank	
	Sampleri	s) Name(s)	Phone Project Manager			Attention:							, FO9T,										EB-Equipment Blank RB - Rinse Blank TB - Trip Blank	ž
					Collection	П		Г	Num	Number of preserved	arved Bottles										_	L		П
	SGS Semple #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HOSH	HNO?	MECH Di Meter	ENCORE		, 404T	· • · · · <u> </u>								LAB USE ONLY	~
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		1 Business Day EMERGENCY						Commercial "A" = Results Only	al "A" ≃ Re	seults Only														
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JC93721XA.xls Rev. Date: 4/10/18

Page 7 of 9

Date / Time: 8/26/2019 11:47:25 AM

TAMMY CSR:

Job #: JC93721XA

Client Project: Philadelphia District, Reservoir Sampling

Deliverable: REDT2

TAT: Due 9/5/2019

Sub Lab: MJ Reider Associates Inc, Env. Testing Laboratories

Address: 107 Angelica Street

State: PA

City: Reading

Zip: 19611

Contact: Sample Receiving / Rich Wheeler

Phone: 610-374-5129

Aliquot				!											`	Fr
Time Sampled	10:00:00 AM	10:00:00 AM	9:10:00 AM	9:10:00 AM	9:10:00 AM	9:10:00 AM	9:10:00 AM	9:10:00 AM	8:30:00 AM	8:30:00 AM	8:30:00 AM	8:30:00 AM	8:30:00 AM	8:30:00 AM	10:10:00 AM	10:10:00 AM
Date Sampled	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019	8/22/2019
Sampled By	<u>GW</u>	<u>GW</u>	<u>GW</u>	<u>GW</u>	<u>GW</u>	GW	GW	GW G	<u>GW</u>	M9	<u>GW</u>	œM B	<u>RM</u>	<u>@M</u>	œM M	<u>MS</u>
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Client Sample Description	PR-18	PR-1S	PR-2S	PR-2S	PR-2M	PR-2M	PR-2D	PR-2D	PR-3S	PR-3S	PR-3M	PR-3M	PR-3D	PR-3D	PR-4S	<u>PR-4S</u>
SGS Sample #	JC93721-1XA	JC93721-1F	JC93721-2XA	JC93721-2E	JC93721-3XA	JC93721-3E	JC93721-4XA	JC93721-4F	JC93721-5XA	JC93721-5E	JC93721-6XA	JC93721-6F	JC93721-7XA	JC93721-7F	JC93721-8XA	JC93721-8F

9030179

Date:

Sample Management Receipt:

Comments:

MJRA Terms & Conditions

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

Sample Submission, Sample Acceptance & Sampling Containers

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

Turnaround Times (TAT)

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. *RUSH TAT Surcharges are applied for expedited turnaround times.

Analytical Results, Sample Collection Integrity & Subcontracting

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

Payment Terms

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

Warranty & Litigation

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:

Rafael A Quijada For Amy L Morriss Project Manager



107 Angelica Street O Reading, PA 19611 O www.mjreider.com (610) 374-5129 O fax (610) 374-7234

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NELAP accredited by PA. (PADEP #06-00003) Visit our website to view our current

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

Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 9 of 9





Dayton, NJ

Section 3

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

SGS	S	AIN OF CUST SS North America Inc D 235 Route 130, Dayton, NJ	Payton	FED-EX Tracking #		ge <u>l</u> of <u>l</u>
		732-329-0200 FAX: 732-329		SGS Quote #	SGS Job#	J(93721
Client / Reporting Information	Project	www.sgs.com/ehsusa			Requested Analysis	Matrix Codes
Company Name:	Project Name:			-9	Requested Atlanysis	Watrix Codes
USACE - Phila District	USACE Resen	20185 - Prom	pion	Reide No.		DW - Drinking Water GW - Ground Water
100 Penn Sa East	Street			1 . 1 & 1 1 1/1		WW - Water SW - Surface Water
City State Zip	City State	Billing Information (if different from Company Name	n Report to)	m mon TKN XNO3		SO - Soil SL- Studge
Phila PA 19107	Prompte N PA	Struet Address	······································	1 2 5 7 3		SED-Sediment OI - Oil
Froject Contact E-mail	Project#	Stragt Address		1 1 7 70 1	.	LIQ - Other Liquid AIR - Air
Phone #	Client Purchase Order !	City	State Zip	\$06 108 108	·	SOL - Other Solid WP - Wipe
215-656-6545	Project Manager	Alteritor:		3 1 1 5		FB - Field Blank EB-Equipment Blank
Sempler(s) Name(s) (610 Phone # Greg Wack 597-9780	Trumay McClosky	Alternation			.	RB - Rinse Blank YB - Trip Blank
G1 - 5 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	Zoluctio		Number of preserved Bottles	1 2 3 4 3		
sas servola # Field ID / Point of Collection	MEOH/DI Visi # Date Time	Sempled Grab (G) # of bottles	HGH NaOH HNO, H ₂ SO ₄ NO/HE DI Water ale OH ENORE	TPOY (SOG PIKALIMITY PROD, TD		LAB USE ONLY
IF PR-IS	8/22/19 1000	10 G SW 9	XXX	XXXX		SUB
2F PR- 25	8/22/19/9:10	150 G SW 9	X X	XXXX		NI
36 PR-2M	8/22/19 9:10	10, G SW 9		XXXX		43072
YE PR-AD	8/22/19/10	MY G Sw 9	X X	XXXX		1944
SE PR.35	8/22/19/8/30	WG 50 9	x x	XXXX		
6F PR-3m	8/22/19830	16 G SW 9	x x	XXX		
78 PR. 3D	8/22/19 8:30	Part G 500 9	x x	XXXX		
RF PR- 45	8/22/19/0:10		x X	XXXX		
Turn Around Time (Bu			Deliverable			nents / Special Instructions
10 Business Days	Approved By (SGS PM): / Date:	Commercial "A" (Level		DOD-QSMS	TOF/FCF S Eurofin 1	amples to
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	VERIFICATION.	Full Tier I (Level 4)	CT RCP Criteria	}	EURON "	v.
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All date availabits his Labilink App	roval needed for 1-3 Business Day TAT	Commerci	al "C" = Results + QC Summary + Partial ime samples chapge possossion, in	Raw data	http://ww	w.sqs.com/en/terms-end-conditions
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JC93721XA: Chain of Custody Page 1 of 3

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ompany Name:	Project Name	s:		t Inform										+			Regu	ested.	Analysis	8				Matrix Codes
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00 Penn Sq. Eossy	City		State	Billing in	formati	on (if diff	erent from	Repo	rt to)					ں ا									- 1	WW - Water SW - Surface Water SO - Soil
nila. PA 19107	Prom	MODIAN	ρα	Journ, June										- 2)							i I		SL- Studge SED-Sediment
Soe Loeper	Project #			Street Ad	dress								_	T L	1									OI - Oil LIQ - Other Liquid
215-656-6545	Client Purchas	se Order#		City					State			Zip)	700	2									AIR - Air SOL - Other Solid WP - Wipe
poler(e) Name(e) (a.1.5) Phase #	Project Manag	ger AA - AL		Attention				_					<u>C</u>		5]			1						FB - Field Blank EB-Equipment Blank
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Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	ş	Na OH	og F og F	NONE	MEOH	ENCOR		1							, 1		LAB USE ONLY
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10 Business Days	Approved By (S	BGS PM): / Date:			=		A" (Level 1		Ę	_			gory A			DOD-QSM5		30	moj	0 h	Da	ME	لمما	
5 Business Days				1	-	mercial " educed (I	B" (Level 2)	Ļ	_	(YASP AA MCF		gory B				`	<i>_</i>	٠٣,	~	ć.,		1	
3 Business Days'					•	Fier! (Le			F	_	T RCP						7	07	رع	200	Bu Du	vz		20
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EHSA-QAC-0023-02-FORM-Dayton - Standard COC.xlsx

JC93721XA: Chain of Custody Page 2 of 3

SGS Sample Receipt Summary

Job Number: JCS	93721	Client:	USACE-PHILADELPHIA DISTRICT	Project: PHILADELPHIA DI	STRICT, RESERVOIR SAMPL
Date / Time Received: 8/2	2/2019 4:48:00) PM	Delivery Method:	Airbill #'s:	
	•	, ,	Cooler 2: (2.6); Cooler 3: (2.8); Cooler 2: (2.5); Cooler 3: (2.7);		
Custody Seals Present:		3. COC Pro	esent: S/Time OK 1. Sample lat 2. Container	grity - Documentation bels present on bottles: labeling complete:	<u>Y or N</u> ☑ □ ☑ □
Cooler Temperature 1. Temp criteria achieved: 2. Cooler temp verification: 3. Cooler media: 4. No. Coolers:	Y or N ✓ [IR Gui Ice (Ba	n	Sample Inte	ntainer label / COC agree: egrity - Condition cvd within HT: ers accounted for: of sample:	✓ □ Y or N ✓ □ Intact
Quality Control Preservation 1. Trip Blank present / cooler: 2. Trip Blank listed on COC: 3. Samples preserved properly 4. VOCs headspace free:	: 🗷	N N/A	Sample Inte 1. Analysis r 2. Bottles re 3. Sufficient 4. Compositi	equity - Instructions equested is clear: ceived for unspecified tests volume recvd for analysis: ng instructions clear: astructions clear:	Y or N N/A V
Test Strip Lot #s: p	H 1-12:	229517	pH 12+:208717	Other: (Specify)	
Comments SM089-03					

Rev. Date 12/7/17

JC93721XA: Chain of Custody Page 3 of 3



Dayton, NJ 10/05/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC94820

Sampling Date: 09/11/19



Army Corps of Engineers

joseph.m.loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 22

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Laura Degenhardt General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 Please share your ideas about



1 of 22

Sections:

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	8
Section 4: Sample Results	
4.1: JC94820-1: PR-1S	11
4.2: JC94820-2: PR-2S	12
4.3: JC94820-3: PR-2M	13
4.4: JC94820-4: PR-2D	14
4.5: JC94820-5: PR-3S	15
4.6: JC94820-6: PR-3M	16
4.7: JC94820-7: PR-3D	17
4.8: JC94820-8: PR-4S	18
Section 5: Misc. Forms	19
5.1: Chain of Custody	20



Sample Summary

USACE-Philadelphia District

Job No:

JC94820

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC94820-1	09/11/19	11:50 GW	09/11/19	AQ	Surface Water	PR-1S
JC94820-2	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2S
JC94820-3	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2M
JC94820-4	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2D
JC94820-5	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3S
JC94820-6	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3M
JC94820-7	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3D
JC94820-8	09/11/19	11:30 GW	09/11/19	AQ	Surface Water	PR-4S

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District Job No JC94820

Site: Philadelphia District, Reservoir Sampling Report Date 9/30/2019 9:39:26 AM

On 09/11/2019, 8 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC94820 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ Batch ID: GP23773

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94761-1DUP, JC94761-1MS were used as the QC samples for Nitrogen, Total Kjeldahl.
- Matrix Spike Recovery(s) for Nitrogen, Total Kjeldahl are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ Batch ID: GP23807

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Monday, September 30, 2019

■ Sample(s) JC94820-1DUP, JC94820-1MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ Batch ID: R181266

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-7 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R181267

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-6 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AO Batch ID: R181268

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R181269

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R181270

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-3 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R181279

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R181280

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

Matrix: AQ Batch ID: R181281

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC94820-8 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)

General Chemistry By Method SM2320 B-11

Matrix: AQ Batch ID: GN185

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Monday, September 30, 2019

- Sample(s) JC94999-1DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC94820-3 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-7 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-6 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-5 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-1 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-2 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JC94820-8 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

General Chemistry By Method SM2540 C-11

Matrix: AQ Batch ID: GN89

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94820-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM2540 D-11

Matrix: AQ Batch ID: GN88

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94820-1DUP were used as the QC samples for Solids, Total Suspended.
- JC94820-6 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 600 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC94820-2 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 550 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC94820-5 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC94820-4 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC94820-3 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- JC94820-7 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ Batch ID: GP23786

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94761-1DUP, JC94761-1MS, JC94761-1MSD were used as the QC samples for Nitrogen, Ammonia.

General Chemistry By Method SM4500NO2 B-11

Matrix: AO Batch ID: GN99859

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94634-11DUP, JC94634-11MS were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AO Batch ID: GP23625

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94820-1DUP were used as the QC samples for BOD, 5 Day.
- JC94820-8 for BOD, 5 Day: Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lawest dilution.
- JC94820-4 for BOD, 5 Day: Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lawest dilution.

Monday, September 30, 2019

Page 3 of 4

General Chemistry By Method SM5310 B-11

Matrix: AQ Batch ID: GP23935

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC94820-1MS, JC94820-1MSD were used as the QC samples for Total Organic Carbon.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits Job Number: JC94820

USACE-Philadelphia District Account:

Philadelphia District, Reservoir Sampling 09/11/19 **Project:**

Collected:

Lab Sample ID Client Sample I Analyte	ID Result/ Qual	RL	MDL	Units	Method
JC94820-1 PR-1S					
Alkalinity, Total as CaCO3 ^a Nitrogen, Total Kjeldahl Solids, Total Dissolved Total Organic Carbon	45.0 0.30 49.0 2.1	10 0.20 10 1.0		mg/l mg/l mg/l mg/l	SM2320 B-11 EPA 351.2/LACHAT SM2540 C-11 SM5310 B-11
JC94820-2 PR-2S					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^b Total Organic Carbon	20.0 4.7 0.42 43.0 7.3 4.1	10 1.0 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC94820-3 PR-2M					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^c Total Organic Carbon	30.0 4.2 1.0 49.0 8.3 4.0	10 1.0 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC94820-4 PR-2D					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day ^d Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^c Total Organic Carbon	40.0 1.6 0.64 43.0 12.5 3.5	10 1.0 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11
JC94820-5 PR-3S					
Alkalinity, Total as CaCO3 ^a BOD, 5 Day Nitrogen, Total Kjeldahl Solids, Total Dissolved Solids, Total Suspended ^e Total Organic Carbon	55.0 3.5 0.58 50.0 5.2 4.2	10 1.0 0.20 10 4.0 1.0		mg/l mg/l mg/l mg/l mg/l	SM2320 B-11 SM5210 B-11 EPA 351.2/LACHAT SM2540 C-11 SM2540 D-11 SM5310 B-11

Summary of Hits Job Number: JC94820

Account: USACE-Philadelphia District

Project: Philadelphia District, Reservoir Sampling

Collected: 09/11/19

Lab Sample ID Client Sample ID	Result/				
Analyte	Qual	RL	MDL	Units	Method
JC94820-6 PR-3M					
Alkalinity, Total as CaCO3 ^a	40.0	10		mg/l	SM2320 B-11
BOD, 5 Day	3.2	1.0		mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	0.43	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	43.0	10		mg/l	SM2540 C-11
Solids, Total Suspended ^f	4.2	4.0		mg/l	SM2540 D-11
Total Organic Carbon	4.0	1.0		mg/l	SM5310 B-11
JC94820-7 PR-3D					
Alkalinity, Total as CaCO3 ^a	50.0	10		mg/l	SM2320 B-11
BOD, 5 Day	7.3	1.0		mg/l	SM5210 B-11
Nitrogen, Ammonia	1.7	0.20		mg/l	SM4500NH3 H-11LACHAT
Nitrogen, Total Kjeldahl	0.94	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	72.0	10		mg/l	SM2540 C-11
Solids, Total Suspended ^g	18.0	4.0		mg/l	SM2540 D-11
Total Organic Carbon	7.5	1.0		mg/l	SM5310 B-11
JC94820-8 PR-4S					
Alkalinity, Total as CaCO3 ^a	21.0	10		mg/l	SM2320 B-11
BOD, 5 Day d	1.1	1.0		mg/l	SM5210 B-11
Nitrogen, Total Kjeldahl	0.57	0.20		mg/l	EPA 351.2/LACHAT
Solids, Total Dissolved	52.0	10		mg/l	SM2540 C-11
Total Organic Carbon	3.6	1.0		mg/l	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Reported sample aliquot obtained from filtration of 550 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- (c) Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- (d) Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lawest dilution.
- (e) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- (f) Reported sample aliquot obtained from filtration of 600 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.
- (g) Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.



Dayton, NJ

Section 4

Sample Results		
Report of Analysis		

Report of Analysis

Client Sample ID: PR-1S Lab Sample ID: JC94820-1

Lab Sample ID:JC94820-1Date Sampled:09/11/19Matrix:AQ - Surface WaterDate Received:09/11/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	45.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day	< 1.0	1.0	mg/l	1	09/12/19 21:24	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:18	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/20/19 15:33	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:33	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.30	0.20	mg/l	1	09/23/19 10:28	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	49.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	2.1	1.0	mg/l	1	09/27/19 15:16	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.



⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Report of Analysis

Client Sample ID: PR-2S Lab Sample ID: JC9482

Lab Sample ID:JC94820-2Date Sampled:09/11/19Matrix:AQ - Surface WaterDate Received:09/11/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	20.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day	4.7	1.0	mg/l	1	09/12/19 21:26		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:20	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/20/19 15:34	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:34	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.42	0.20	mg/l	1	09/20/19 10:10	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	43.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended ^c	7.3	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	4.1	1.0	mg/l	1	09/27/19 15:50	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 550 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-2M Lab Sample ID: JC94820-3

Lab Sample ID:JC94820-3Date Sampled:09/11/19Matrix:AQ - Surface WaterDate Received:09/11/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	30.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day	4.2	1.0	mg/l	1	09/12/19 21:28		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:21	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/20/19 15:35	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:35	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	1.0	0.20	mg/l	1	09/20/19 10:11	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	49.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended ^c	8.3	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	4.0	1.0	mg/l	1	09/27/19 16:01	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-2D Lab Sample ID: JC94820-4

Matrix: AQ - Surface Water Date Received: 09/11/19
Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Date Sampled: 09/11/19

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	40.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day b	1.6	1.0	mg/l	1	09/12/19 21:30	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:23	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate c	< 0.11	0.11	mg/l	1	09/20/19 15:37	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:37	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.64	0.20	mg/l	1	09/20/19 10:12	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	43.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended ^d	12.5	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	3.5	1.0	mg/l	1	09/27/19 16:47	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lawest dilution.
- (c) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (d) Reported sample aliquot obtained from filtration of 400 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.



Report of Analysis

Client Sample ID: PR-3S Lab Sample ID: JC94820-5

Date Sampled: 09/11/19 Matrix: **Date Received:** 09/11/19 AQ - Surface Water Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
	~ ~ ·	1.0	/4		00/40/40 44 04		
Alkalinity, Total as CaCO3 ^a	55.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day	3.5	1.0	mg/l	1	09/12/19 21:32	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:24	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate ^b	< 0.11	0.11	mg/l	1	09/20/19 15:38	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:38	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.58	0.20	mg/l	1	09/20/19 10:13	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	50.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended ^c	5.2	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	4.2	1.0	mg/l	1	09/27/19 16:59	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 500 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-3M Lab Sample ID: JC94820-6

Date Sampled: 09/11/19 Matrix: AQ - Surface Water **Date Received:** 09/11/19 Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	40.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day	3.2	1.0	mg/l	1	09/12/19 21:40	EB	SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:25	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/20/19 15:39	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:39	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.43	0.20	mg/l	1	09/20/19 10:13	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	43.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended ^c	4.2	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	4.0	1.0	mg/l	1	09/27/19 17:10	CD	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5.
- (b) Calculated as: (Nitrogen, Nitrate + Nitrite) (Nitrogen, Nitrite)
- (c) Reported sample aliquot obtained from filtration of 600 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-3D Lab Sample ID: JC94820-7

Lab Sample ID:JC94820-7Date Sampled:09/11/19Matrix:AQ - Surface WaterDate Received:09/11/19Percent Solids:n/a

Project: Philadelphia District, Reservoir Sampling

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	50.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day	7.3	1.0	mg/l	1	09/12/19 21:42	EB	SM5210 B-11
Nitrogen, Ammonia	1.7	0.20	mg/l	1	09/20/19 14:30	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate b	< 0.11	0.11	mg/l	1	09/20/19 15:40	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:40	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.94	0.20	mg/l	1	09/20/19 10:14	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	72.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended ^c	18.0	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	7.5	1.0	mg/l	1	09/27/19 17:21	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

⁽c) Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter as the sample clogged the filter at the higher volume.

Report of Analysis

Client Sample ID: PR-4S

Lab Sample ID: JC94820-8

Matrix: AQ - Surface Water

Date Sampled: 09/11/19

Percent Solids: n/a

Project: Philadelphia District, Reservoir Sampling

Toject.

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	21.0	10	mg/l	1	09/19/19 11:24	MS	SM2320 B-11
BOD, 5 Day b	1.1	1.0	mg/l	1	09/12/19 21:44		SM5210 B-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	09/20/19 14:31	KI	SM4500NH3 H-11LACHAT
Nitrogen, Nitrate c	< 0.11	0.11	mg/l	1	09/20/19 15:43	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/20/19 15:43	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	09/11/19 21:46	CM	SM4500NO2 B-11
Nitrogen, Total Kjeldahl	0.57	0.20	mg/l	1	09/20/19 10:15	KI	EPA 351.2/LACHAT
Solids, Total Dissolved	52.0	10	mg/l	1	09/17/19 14:45	RC	SM2540 C-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	09/17/19 10:44	RC	SM2540 D-11
Total Organic Carbon	3.6	1.0	mg/l	1	09/27/19 17:32	CD	SM5310 B-11

⁽a) Sample was titrated to a final pH of 4.5.

⁽b) Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lawest dilution.

⁽c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)



Misc. Forms

Dayton, NJ

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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P PR-35			1240	9	G	SA	9	X	T	K	П	H	X	X	X	X		T		T				
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JC94820: Chain of Custody Page 1 of 3

SGS Sample Receipt Summary

Job Number: JC948	20 Client:	USACE-PHILADELPHIA DIS	TRICT Project:	PHILADELPHIA DISTRI	CT, RESERV	OIR SAMPL
Date / Time Received: 9/11/20	019 6:45:00 PM	Delivery Method:	Airbill #'	s:		
Cooler Temps (Raw Measured) Cooler Temps (Corrected)	, ,	Cooler 2: (3.4); Cooler 3: (3 Cooler 2: (3.3); Cooler 3: (3				
Cooler Security 1. Custody Seals Present: 2. Custody Seals Intact: ✓	Dr N 3. COC Pi		1. Sample Integrity - Document 1. Sample labels present on but 2. Container labeling complete	oottles:		
Cooler Temperature 1. Temp criteria achieved: 2. Cooler temp verification: 3. Cooler media: 4. No. Coolers: Quality Control Preservation 1. Trip Blank present / cooler: 2. Trip Blank listed on COC: 3. Samples preserved properly: 4. VOCs headspace free:	Y or N		3. Sample Integrity - Condit 1. Sample recvd within HT: 2. All containers accounted fo 3. Condition of sample: Sample Integrity - Instruct 1. Analysis requested is cleat 2. Bottles received for unspet 3. Sufficient volume recvd for 4. Compositing instructions of	r: ttions r: cified tests analysis:	f or N 2	 N/A
Test Strip Lot #s: pH 1	-12:229517	pH 12+:	5. Filtering instructions clear:	her: (Specify)		✓
Comments						

SM089-03 Rev. Date 12/7/17

JC94820: Chain of Custody

Page 2 of 3

CHAIN OF CUSTODY SGS North America Inc. - Dayton

_			JC94820
Page	1	of	 5094821

		GS North America Inc 2235 Route 130, Dayton, NJ		FED-EX Tracking #	Batrie O	der Convel il	
The state of the s		732-329-0200 FAX: 732-32		SGS Quote #	SGS Jab	ıť	
Client / Reporting Information	Profe	www.sgs.com/ehsusa		C 20			
Company Name:	Project Name:		7-	A TT	quested Analysis		Matrix Codes
Company Nome: UKACE - Phila . District Street Address	USACE Resen	JOIRS -F.E.	Walter/Amoro	12年			DW - Drinking Water GW - Ground Water
100 Page Se EasT	Street	Part 16 11 11 11 11		[레			WW - Water SW - Surface Water
Street Address 100 Penn Sq. Ecus T City State Zup Phila PA. 19107	City State	Billing Information (If different fro Company Name	m Réport to)	1-1			SO - Soll SL- Sludge
Project Contact E-mail	UKITE Haven PA	Street Address					SED-Sediment OI - OI
Joe Lorper				22			LIQ - Other Liquid AIR - Air
Phone # 715 - 125 12 125115	Client Purchase Order #	City ·	State Zip				SOL - Other Solid WP - Wipo
Sampler(s) Name(s) (0/0 - Phone #	Project Manager	Attention:		and			FB - Field Blank EB-Equipment Blank
215-656-6545 Samplerto Name(s) 60-Phone # Greg Wacik 597-9780	Tammy McCloskey		20				RB - Rinso Blank TB - Trip Blank
	Confetio	1	Number of preserved Bettes CF	Ca			
sos sampla # Field ID / Point of Collection	MEOH/DI Vioi # Data Time	Sempled Grab (G) # cf Gemp (C) Matrix Botiles	1_ 5 8 2 8 6 8 6	19			LAB USE ONLY
I WA-18	9/11/9905	HG SW 3	X	火			
Z WA-25	7/0	G 50 8	X	X			
5 WA-35	/ 1000	1 G SD 8		x			
(0 WA-45	945	1 G 500 3	x X	X			
7 WA-55	930	1 6 50 8	X	X			
8 WA-US	750	1 G 300 2	X	X			
11 WA-75	7 830	1 6 SW 2	X	×			
PR-15 JOA4820-	1 1/50	16502	\sim	х		1	
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PR- 45 -	8 V 1/30	6 5W Z		У			
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Other All data avallable via Labile Appr	royal needed for 1-3 Business Day TAT	Commercial *	A" = Results only; Commercial "B" = Resul	lis + QC Summary			
	Sample Custody n	Commerci nust be documented below each t	of "C" = Results + QC Summary + Partial R ime samples change possession, incl	uding courier delivery.	hito	://www.sqs.com/en/term	s-and-conditions
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JC94820: Chain of Custody

Page 3 of 3



Dayton, NJ 10/07/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC94820X

Sampling Date: 09/11/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph.M.Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 18

TNI LABORATORA

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Laura Degenhardt General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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Please share your ideas about

SGS

Sections:

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-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	5
Section 3: Misc. Forms	15
3.1: Chain of Custody	16



Sample Summary

USACE-Philadelphia District

Job No: JC94820X

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC94820-1F	09/11/19	11:50 GW	09/11/19	AQ	Surface Water	PR-1S
JC94820-1X	09/11/19	11:50 GW	09/11/19	AQ	Surface Water	PR-1S
JC94820-2F	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2S
JC94820-2X	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2S
JC94820-3F	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2M
JC94820-3X	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2M
JC94820-4F	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2D
JC94820-4X	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2D
JC94820-5F	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3S
JC94820-5X	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3S
JC94820-6F	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3M
JC94820-6X	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3M
JC94820-7F	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3D



Sample Summary (continued)

USACE-Philadelphia District

Job No: JC94820X

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC94820-7X	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3D
JC94820-8F	09/11/19	11:30 GW	09/11/19	AQ	Surface Water	PR-4S
JC94820-8X	09/11/19	11:30 GW	09/11/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract	Lab Data	
Report of Ar	nalysis	



Certificate of Analysis

Laboratory No.: 9033111 **Report:** 09/23/19 **Lab Contact:** Amy L Morriss

Project: Army Corp Reservoirs

Attention: Tammy McCloskey

Reported To: SGS North America

2235 US Highway 130 Dayton, NJ 08810

Lab ID: 9033111-01 **Collected By:** Client **Sampled:** 09/11/19 11:50 **Received:** 09/18/19 10:15

Sample Desc: PR-1S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	< 0.01	mg/l	0.01	0.05	SM 4500-P E	09/19/19	U	JCL

Lab ID: 9033111-02 **Collected By:** Client **Sampled:** 09/11/19 13:15 **Received:** 09/18/19 10:15

Sample Desc: PR-2S Sample Type: Grab

				Rep.					
	Result	Unit	MDL	Limit	Analysis Method	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P,	0.008	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, J	JCL	
Dissolved									
General Chemistry									
Phosphorus as P, Total	0.03	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL	

Lab ID: 9033111-03 **Collected By:** Client **Sampled:** 09/11/19 13:15 **Received:** 09/18/19 10:15

Sample Desc: PR-2M Sample Type: Grab

				Rep.				
	Result	Unit	MDL	Limit	Analysis Method	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P,	0.01	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, J	JCL
Dissolved								
General Chemistry								
Phosphorus as P, Total	0.03	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL
General Chemistry	0.03	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL



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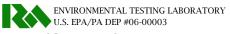
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Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 1 of 9





Lab ID: 9033111-04 **Collected By:** Client **Sampled:** 09/11/19 13:15 **Received:** 09/18/19 10:15

Sample Desc: PR-2D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Dissolved General Chemist	try				,	•		•
Phosphorus as P, Dissolved	0.009	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, J	JCL
General Chemistry								
Phosphorus as P, Total	0.05	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL

Lab ID: 9033111-05 **Collected By:** Client **Sampled:** 09/11/19 12:40 **Received:** 09/18/19 10:15

Sample Desc: PR-3S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst	
Dissolved General Chemist	ry								
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, U	JCL	
General Chemistry									
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL	

Lab ID: 9033111-06 **Collected By:** Client **Sampled:** 09/11/19 12:40 **Received:** 09/18/19 10:15

Sample Desc: PR-3M Sample Type: Grab

				Rep.				
	Result	Unit	MDL	Limit	Analysis Method	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	0.03	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL

Lab ID: 9033111-07 **Collected By:** Client **Sampled:** 09/11/19 12:40 **Received:** 09/18/19 10:15

Sample Desc: PR-3D Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Dissolved General Chemist	ry				, , , , , , , , , , , , , , , , , , , ,	,		,
Phosphorus as P, Dissolved	0.08	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11	JCL
General Chemistry								
Phosphorus as P, Total	0.10	mg/l	0.01	0.05	SM 4500-P E	09/19/19		JCL



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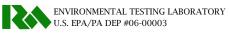
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Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 2 of 9





Lab ID: 9033111-08 **Collected By:** Client **Sampled:** 09/11/19 11:30 **Received:** 09/18/19 10:15

Sample Desc: PR-4S Sample Type: Grab

	Result	Unit	MDL	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Dissolved General Chemist	ry							
Phosphorus as P, Dissolved	< 0.007	mg/l	0.007	0.05	SM 4500-P E	09/19/19	G-11, U	JCL
General Chemistry								
Phosphorus as P, Total	0.02	mg/l	0.01	0.05	SM 4500-P E	09/19/19	J	JCL

Quality Control

General Chemistry

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9I1172								
MB (B9I1172-BLK1)				Prepared & Ana	dyzed: 09/19/20	19		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9I1172-BLK2)				Prepared & Ana	lyzed: 09/19/20	19		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
MB (B9I1172-BLK3)				Prepared & Ana	llyzed: 09/19/20	19		
Phosphorus as P, Total	< 0.05	0.05	mg/l					U
LFB (B9I1172-BS1)				Prepared & Ana	llyzed: 09/19/20	19		
Phosphorus as P, Total	1.02	0.05	mg/l	102	80-120			
LFM (B9I1172-MS1)		Source: 9033111-01		Prepared & Ana	llyzed: 09/19/20	19		
Phosphorus as P, Total	0.98	0.05	mg/l	98.3	80-120			
LFMD (B9I1172-MSD1)		Source: 9033111-01		Prepared & Ana	llyzed: 09/19/20	19		
Phosphorus as P, Total	0.97	0.05	mg/l	97.4	80-120	0.920	20	

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B9I1173								
MB (B9I1173-BLK1)				Prepared & An	alyzed: 09/19/20	19		
Phosphorus as P, Dissolved	< 0.05	0.05	mg/l					G-11, U
LFB (B9I1173-BS1)				Prepared & An	alyzed: 09/19/20	19		
Phosphorus as P, Dissolved	1.02	0.05	mg/l	102	80-120			G-11



107 Angelica Street O Reading, PA 19611 O www.mjreider.com O (610) 374-5129 O fax (610) 374-7234

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Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 3 of 9



Preparation Methods

Specific Method	Preparation Method	Prepared Date	Prepared By
9033111-01	·		
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-02			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-03			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-04			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-05			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-06			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-07			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL
9033111-08			
SM 4500-P E	SM 4500-P B	09/19/2019	JCL

Notes and Definitions

G-11 The sample was filtered after it was received at the laboratory.

J Estimated value

U Analyte was not detected above the indicated value.



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Additional accreditations by CT (PH-0210), MD (261), NY(12094)

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LAB USE ONLY

Matrix Codes

JC94820X.xls Rev. Date: 4/10/18

TAMMY CSR:

Date / Time: 9/17/2019 10:33:15 AM

Job #: JC94820X

Client Project: Philadelphia District, Reservoir Sampling া বি রুজান্ত ্র

ASSESSED LIST

Deliverable: REDT2

TAT: Due 10/2/2019

Exercises Sub Lab. MJ Reider Associates Inc, Env. Testing Laboratories

Address: 107 Angelica Street

City: Reading

State: PA Zip: 19611 Contact: Sample Receiving / Rich Wheeler

Phone: 610-374-5129

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Page 7 of 9

Date:

Sample Management Receipt:

9033111

Comments:

MJRA Terms & Conditions

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

Sample Submission, Sample Acceptance & Sampling Containers

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

Turnaround Times (TAT)

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. *RUSH TAT Surcharges are applied for expedited turnaround times.

Analytical Results, Sample Collection Integrity & Subcontracting

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

Payment Terms

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

Warranty & Litigation

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:

any L Muriss

Amy L Morriss Project Manager



107 Angelica Street O Reading, PA 19611 O www.mjreider.com O (610) 374-5129 O fax (610) 374-7234

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

NELAP accredited by PA. (PADEP #06-00003) Visit our website to view our current

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

Additional accreditations by CT (PH-0210), MD (261), NY(12094)

Page 9 of 9





Dayton, NJ

Misc. Forms
Custody Documents and Other Forms
Includes the following where applicable: • Chain of Custody

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JC94820X: Chain of Custody Page 1 of 3

SGS Sample Receipt Summary

Job Number: JO	C94820	Clie	ent: USACE-P	HILADELPHIA D	ISTRICT	Project: PHILADELPHIA	DISTRICT,	RESERVO	IR SAMPL
Date / Time Received: 9/	11/2019 6	:45:00 PM	Delivery I	Method:		Airbill #'s:			
Cooler Temps (Raw Measu Cooler Temps (Correc	•	,	,	, ,	,	7); Cooler 5: (3.1); Cooler 6: 6); Cooler 5: (3.0); Cooler 6:			
Custody Seals Present:	Y or N V	3. CC	OC Present: Dates/Time OK	<u>Y</u> or N ✓ □ ✓ □	Sample labels Container labe	y - Documentation present on bottles: ling complete: ner label / COC agree:	Y V	or N	
Temp criteria achieved: Cooler temp verification: Cooler media: No. Coolers:	✓	IR Gun ce (Bag)			Sample Integri 1. Sample recvd 2. All containers a 3. Condition of sa	within HT: accounted for:	Y ✓	or N	
1. Trip Blank present / cooler: 2. Trip Blank listed on COC: 3. Samples preserved proper 4. VOCs headspace free:	:	or N	<u>N/A</u> □ □		Sample Integrii 1. Analysis reque 2. Bottles receive 3. Sufficient volu	ty - Instructions ested is clear: ed for unspecified tests ume recvd for analysis: nstructions clear:		or N	N/A
Test Strip Lot #s:	pH 1-12:	2295	17	pH 12+:	208717	Other: (Specify)		_	
Comments SM089-03 Rev. Date 12/7/17									

JC94820X: Chain of Custody

Page 2 of 3

			3S North America Inc 1 2235 Route 130, Dayton, NJ		#		Batrie C	Eatine Order Central if				
The state of the s		TEL.	732-329-0200 FAX: 732-329 www.sgs.com/ehsusa	9-3499/3480	SGS Quele #			SGS Ja	b#			
Client / Reporting Informatio	n	. Prolec	t Information		-		Requested Analysis Matrix Codes					
Company Name:	Project Name	B:		. 1.	Â		T	Altalysis	T	TT	Watrix Codes	
Company Nome: IKACE - Phila Dis Stroet Address	that USA	<u>ace Resen</u>	DOIRS -F.E.	Walter/Honor	NIE .		1 1				DW - Drinking Water GW - Ground Water	
Street Address	Street				1 a						WW - Water SW - Surface Water	
City State PA. 19 Protect Contact E-mail	Zip City	Haven PA	Billing Information (if different from Company Name	m Report to)	-						SO - Soil SL- Studge	
Phila. PA. 19.	107 UNITE	Haven PA	Straet Address		10						SED-Sediment OI - OI	
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JOE LORDER	Client Purcha	so Order#	City ·	State Zip		1 1		1			SOL - Other Solid WP - Wipe	
215 - 650 - 654 6 Semplor(e) Name(s) 6/0 -	Phone # Project Mane	ner	Attention:		and			-			FB - Field Blank EB-Equipment Blank	
Greg Wacik 597-9	780 Tanny	McCloskeV	Patolinan.		1						RB - Rinso Blank TB - Trip Blank	
7		Collection		Number of preserved Bottes (7)	Ö			1				
ses Sample # Field ID / Point of Collection	MEOH/DI Viol A		Sampled Grab (G) Matrix 500(6)	HCI NaOH HXO, HSO, NOTE DIVAME MEOH MEOH							LAB USE ONLY	
1 WA-18		9/11/19/905	A GISIO SI	X	x							
Z 40 A - 25		710	6 50 B	×	x							
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(0 WA-45		945	G Su 3					\top	 	++	t	
7 WA-55		930	6 30 8		× .			_	 	++-		
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Other All data avallable via Lablink	'Approval needed fo	r 1-3 Business Day TAT	Commercia	A" = Results only; Commercial "B" = Resu al "C" = Results + QC Summary + Partial F	law data	· .		htt	o://www.sa	s.com/en/tern	ns-and-conditions	
Refinquiphed by:	Date / Jime:	Sample Custody m	ust be documented below each ti	me samples change possession, inc	luding courier o			Instal	<i>a</i> .			
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JC94820X: Chain of Custody Page 3 of 3



Dayton, NJ 09/19/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0 **Automated Report**



USACE-Philadelphia District

Philadelphia District, Reservoir Sampling

CONTRACT#W912BU18D0003/TO#W912BU19F0065

SGS Job Number: JC94820XA

Sampling Date: 09/11/19



USACE-Philadelphia District 100 Penn Square East Philadelphia, PA 19107 Joseph. M. Loeper@usace.army.mil

ATTN: Joseph Loeper

Total number of pages in report: 16

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499 Please share your ideas about

how we can serve you better at:

EHS.US.CustomerCare@sgs.com

Sections:

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-1-

Table of Contents

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	4
Section 3: Misc. Forms	13
3.1: Chain of Custody	14



Sample Summary

USACE-Philadelphia District

Job No: JC94820XA

Philadelphia District, Reservoir Sampling Project No: CONTRACT#W912BU18D0003/TO#W912BU19F0065

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
JC94820-1XA	09/11/19	11:50 GW	09/11/19	AQ	Surface Water	PR-1S
JC94820-2XA	09/11/19	13:15 GW	09/11/19	AQ	Surface Water	PR-2S
JC94820-5XA	09/11/19	12:40 GW	09/11/19	AQ	Surface Water	PR-3S
JC94820-8XA	09/11/19	11:30 GW	09/11/19	AQ	Surface Water	PR-4S



Dayton, NJ

Section 2

Subcontract Lab Data
Report of Analysis



Analytical Report

Serialized: 09/16/2019 11:07am QC35

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130

DAYTON,NJ 08810

Regarding:

SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

PROJECT ID:

W09769 USACE

LABORATORY REPORT NUMBER:

L7160946

Authorized by: Douglas J. Gump Client Services Manager

DarJU



Analytical Report Printed 09/16/19 11:06 QC35

KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

Regarding: KRISTIN DEGRAW SGS NORTH AMERICA, INC. 2235 ROUTE 130 DAYTON, NJ 08810

	: W09769, SGS NORTH W09769 USACE, USA	C.	P.O. No:		Inv. No: PWSID No:	1991795 PI		
Sample ID L7160946-1	Sample Description WA-1S Received Date/Tin	n e/Temp 09/1	1/19 05:50pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 09:05am NA C	Sampled by Customer	
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst	
ENVIRONM	MENTAL MICROBIOL	OGY WA-	18					
Total Coliform Fecal Coliform		>20000 Q >600 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 10	100 10	09/11/19 07:10PM KC2 09/11/19 10:21PM KC2	
Sample ID L7160946-2	Sample Description WA-2S Received Date/Tin	n e/Temp 09/1	1/19 05:50pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 07:10am NA C	Sampled by Customer	
Parameter		Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst	
ENVIRONM	MENTAL MICROBIOL	OGY WA-	2S					
Total Coliform	,	709 Q 22 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	09/11/19 06:53PM KC2 09/11/19 10:21PM KC2	

PIN: 28748 Serial Number: 6544422

Analytical Report Printed 09/16/19 11:06

Account No: W09769 Project No: W09769), SGS NORTH AMERICA, INC USACE, USACE		P.O. No:		Inv. No: PWSID No:	1991795 PI		
Sample ID Sample L7160946-3 WA-3S Rec	/19 05:50pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 0:00am NA C	Sampled by Customer			
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst		
ENVIRONMENTAL	MICROBIOLOGY WA-3	5						
Total Coliform, MF Fecal Coliform, MF	7100 Q 20 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	09/11/19 07:10PM KC2 09/11/19 10:21PM KC2		
L7160946-4 WA-4S	e Description eived Date/Time/Temp 09/11	/19 05:50pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 09:45am NA C	Sampled by Customer		
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst		
ENVIRONMENTAL	MICROBIOLOGY WA-48	5						
Total Coliform, MF Fecal Coliform, MF	10000 E, Q 26 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	1 100	100 1	09/11/19 07:10PM KC2 09/11/19 10:21PM KC2		
L7160946-6 WA-6S	e Description eived Date/Time/Temp 09/11	/19 05:50pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 07:50am NA C	Sampled by Customer		
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst		
ENVIRONMENTAL	MICROBIOLOGY WA-68	8						
Total Coliform, MF Fecal Coliform, MF	510 Q <1 Q	cfu/100ml cfu/100ml	SM 9222B SM 9222D	10 100	10 1	09/11/19 07:10PM KC2 09/11/19 10:21PM KC2		
L7160946-7 WA-7S	Description eived Date/Time/Temp 09/11	/19 05:50pm 4.8 C	Iced (Y/N): Y		ate/Time/Temp 08:30am NA C	Sampled by Customer		
Parameter	Result	Qual Units	Method	DF	RL	Test Date, Time, Analyst		

PIN: 28748 Serial Number: 6544422

Analytical Report Printed 09/16/19 11:07

Account No: W09769, SGS NORTH AMERICA, INC. Project No: W09769 USACE, USACE					P.O. No:		Inv. No: PWSID No:	1991795 PI		
	Sample Description WA-7S Received Date/Tim	ne/Temp 09/11/	19 05:50pm 4	4.8 C Iced (Y /	'N) : Y		ate/Time/Temp 08:30am NA C	Sampled by Customer		
Parameter		Result	Qual Unit	s Metho	d	DF	RL	Test Date, Time, Analyst		
ENVIRONM	ENTAL MICROBIOL	OGY WA-7S								
Total Coliform, Fecal Coliform		670 Q 18 Q		00ml SM 922 00ml SM 922		10 100	10 1	09/11/19 07:10PM KC2 09/11/19 10:21PM KC2		
	Sample Description PR-1S Received Date/Tim	ne/Temp 09/11/	19 05:50pm 4	1.8 C Iced (Y /	'N) : Y		ate/Time/Temp 11:50am NA C	Sampled by Customer		
Parameter		Result	Qual Unit	s Metho	d	DF	RL	Test Date, Time, Analyst		
ENVIRONM	ENTAL MICROBIOL	OGY PR-1S								
Total Coliform, Fecal Coliform	•	>2000 22 Q		00ml SM 922 00ml SM 922		10 100	10 1	09/11/19 06:53PM KC2 09/11/19 10:21PM KC2		
	Sample Description PR-2S Received Date/Tim	ne/Temp 09/11/	19 05:50pm 4	1.8 C Iced (Y /	N) : Y		ate/Time/Temp 01:15pm NA C	Sampled by Customer		
Parameter		Result	Qual Unit	s Metho	d	DF	RL	Test Date, Time, Analyst		
ENVIRONM	ENTAL MICROBIOL	OGY PR-2S								
Total Coliform, Fecal Coliform	•	4200 13 Q		00ml SM 922 00ml SM 922		1 100	100 1	09/11/19 06:53PM KC2 09/11/19 10:21PM KC2		
Sample ID L7160946-10	Sample Description PR-3S Received Date/Tim	n e/Temp 09/11/	19 05:50pm 4	1.8 C	N) : Y		ate/Time/Temp 12:40pm NA C	Sampled by Customer		
Parameter		Result	Qual Unit	s Metho	d	DF	RL	Test Date, Time, Analyst		

PIN: 28748 Serial Number: 6544422

Analytical Report

Customer

Printed 09/16/19 11:07

 Account No:
 W09769, SGS NORTH AMERICA, INC.
 P.O. No:
 Inv. No:
 1991795 PI

 Project No:
 W09769 USACE, USACE
 PWSID No:

Sample ID Sample Description Samp. Date/Time/Temp Sampled by

L7160946-10 PR-3S 09/11/19 12:40pm NA C Received Date/Time/Temp 09/11/19 05:50pm 4.8 C lced (Y/N): Y

Parameter Result Qual Units Method DF RL Test Date, Time, Analyst

ENVIRONMENTAL MICROBIOLOGY -- PR-3S

Total Coliform, MF 5700 cfu/100ml SM 9222B 1 100 09/11/19 06:53PM KC2 Fecal Coliform, MF < 1 Q cfu/100ml SM 9222D 100 1 09/11/19 10:21PM KC2

 Sample ID
 Sample Description
 Samp. Date/Time/Temp
 Sampled by

 L7160946-11
 PR-4S
 09/11/19 11:30am NA C
 Customer

Received Date/Time/Temp 09/11/19 05:50pm 4.8 C | Iced (Y/N): Y

Parameter Result **Qual Units** Method DF RL Test Date, Time, Analyst **ENVIRONMENTAL MICROBIOLOGY -- PR-4S** Total Coliform, MF 41000 cfu/100ml SM 9222B 1000 09/11/19 06:53PM KC2 .1 09/11/19 10:21PM KC2 Fecal Coliform, MF 5 Q cfu/100ml SM 9222D 100

Sample Comments | Result Qualifiers:

L7160946-1:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

I 7160946-2 ·

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7160946-3:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7160946-4:

- Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.
- E: For microbiology testing by membrane filtration, the reported result was based on a colony count outside the recommended range of the test. The reported result may be considered an estimate.

L7160946-6:

PIN: 28748 Serial Number: 6544422

Analytical Report Printed 09/16/19 11:07

Account No: W09769, SGS NORTH AMERICA, INC. P.O. No: Inv. No: 1991795 PI

Project No: W09769 USACE, USACE

PWSID No:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7160946-7:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory

L7160946-8:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7160946-9:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7160946-10:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory purposes.

L7160946-11:

Q: Microbiological testing was conducted outside of the recommended holding time of 8 hours. Results may not be acceptable for regulatory



PIN: 28748 Serial Number: 6544422

Page 6 of 8



DEFINITIONS

The following terms or abbreviations are used in this report:

Eurofins QC, LLC (EQC)

<	Less than: In conjunction with a numerical value,
	indicates a concentration less than RL / MDL
>	Greater than: In conjunction with a numerical value,
	indicates a concentration greater than RL / MDL
CFU	Colony Forming Unit
DF	Dilution Factor (For Microbiology, DF = volume of
DF	sample tested)
DRY	Result was reported on a dry weight basis
MCL	EPA recommended "Maximum Contaminant Level"
MDL	Method Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
ND	For odor test: No Odor Observed
ND	For all other tests: Analyte concentration Not
ND	Detected greater than the RL / MDL

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB	Parts per billion: equivalent to 1 microgram per
(µg/L)	kilogram (µg/Kg) for solids or one microgram per liter
	(μg/L) for aqueous samples
PPM	Parts per million: equivalent to 1 milligram per
(mg/L)	kilogram (mg/Kg) for solids or one milligram per liter
(IIIg/L)	(mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation
KL	(LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Data Qualifiers

J	Estimated value ≥ MDL, but < RL
T	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
E	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- · The report shall not be reproduced, except in full, without the written consent of the laboratory.
- · All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been
 performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for
 testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly)
 to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing
 results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Zachary Smith (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ: PA	93 NY	: 12080	MD: 357
East Rutherford Facility Vineland Facility Wind Gap Facility	State ID- State ID- State ID-	NJ: 02015 NJ: 06005 NJ: PA001				

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JC94820XA: Chain of Custody Page 1 of 3

SGS Sample Receipt Summary

Job Number: JC	94820	Cli	ent: USACE	-PHILA	DELPHIA [DISTRICT	Project: PHILA	ADELPHIA DIS	TRICT	, RESER\	OIR SAMPL
Date / Time Received: 9/	11/2019 6	6:45:00 PM	Delive	y Metho	od:		Airbill #'s:				
Cooler Temps (Raw Measu	•	`		, ,			, ,	•	*		
Cooler Temps (Correct	ted) °C:	Cooler 1: (5.0); Cooler	2: (3.3);	Cooler 3:	(3.8); Cooler 4: (3.	6); Cooler 5: (3.0)); Cooler 6: (3.	3);		
Cooler Security	Y or N	<u>L</u>		<u>Y</u>	or N	Sample Integri	ty - Documentation	<u>on</u>	<u>Y</u>	or N	
1. Custody Seals Present:	V	3. Co	OC Present:	✓		Sample labels	present on bottles:		\checkmark		
2. Custody Seals Intact:	V	4. Smpl	Dates/Time C	K 🗸		2. Container labe	•		\checkmark		
Cooler Temperature	<u>Y</u>	or N				3. Sample conta	iner label / COC agr	ee:	\checkmark		
1. Temp criteria achieved:	\checkmark					Sample Integr	ity - Condition		<u>Y</u>	or N	
2. Cooler temp verification:		IR Gun				Sample recvd	=		✓		
3. Cooler media:		ce (Bag)				2. All containers			~		
4. No. Coolers:		6				3. Condition of s	ample:			Intact	
Quality Control Preservati	ion Y	or N	N/A			Sample Integr	ity - Instructions		Υ	or N	N/A
1. Trip Blank present / cooler:		✓				Analysis requ	-		<u> </u>		
2. Trip Blank listed on COC:		✓					ed for unspecified to	ests		✓	
3. Samples preserved properl	ly: 🔽					Sufficient volu	ume recvd for analys	sis:	~		
4. VOCs headspace free:			✓			4. Compositing	instructions clear:				\checkmark
						5. Filtering instr	uctions clear:				\checkmark
Test Strip Lot #s:	pH 1-12:	2295	517		pH 12+: _	208717	Other: (S	Specify)			
Comments											
SM089-03											
Rev. Date 12/7/17											

JC94820XA: Chain of Custody

Page 2 of 3

CHAIN OF CUSTODY SGS North America Inc. - Dayton

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Page	1	of	 5094821

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The state of the s		732-329-0200 FAX: 732-32		SGS Quote #	SGS Jab	ı #			
Client / Reporting Information	Proje	www.sgs.com/ehsusa		C 20			1		
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Company Nome: UKACE - Phila District Street Address	USACE Resen	DOIRS -F.E.	Walter/Amoro	12年			DW - Drinking Water GW - Ground Water		
100 Page Se EasT	Street	Part 1.5		[레			WW - Water SW - Surface Water		
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Project Contact E-mail	City State White Haven PA	Straet Address					SED-Sediment OI - OI		
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Phone # 715 - 125 12 125115	Client Purchase Order #	City ·	State Zip				SOL - Other Solid WP - Wipo		
Sampler(s) Name(s) (0/0 - Phone #	Project Manager	Attention:		and			FB - Field Blank EB-Equipment Blank		
215-656-6545 Samplerto Name(s) 60-Phone # Greg Wacik 597-9780	Tammy McCloskey		20				RB - Rinso Blank T6 - Trip Blank		
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5 WA-35	/ /000	G SD 8		x					
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7 WA-55	930	1 6 50 8	X	X					
8 WA-US	750	1 6 300 2	X	X					
11 WA-75	730	1 6 SW 2	X	×					
PR-15 JOA4820-	1 1/50	16502		x		- L.			
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	Sample Custody n	Commerci nust be documented below each t	of "C" = Results + QC Summary + Partial R ime samples change possession, incl	uding courier delivery.	hito	://www.sgs.com/en/term	s-and-conditions		
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JC94820XA: Chain of Custody Page 3 of 3