

Effluent Quality Assessment

St. Augustine Wastewater Treatment Facility

St. Johns County

NPDES #FL0021938

Sampled April 21, 23 and 25, 2014

August 2014

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
2014 FDEP Bureau of Labs Quality Manual
NELAC Certification No. E31780

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St. Augustine WWTF (Wastewater Treatment Facility), 501 Riberia Street, St. Augustine, St. Johns County, Florida, 32084. NPDES #FL0021938.

Facility Overview

St. Augustine WWTF uses the complete mix activated sludge process to treat domestic wastewater. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO), Consent Order (CO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for toxicity testing were collected on April 21, 23, and 25, 2014. Effluent grab samples for biological and chemical analyses for this facility were collected on April 21, 2014. All samples were collected from the EFD-1 NPDES sampling point for Outfall D-001 by Sharon Piltz, Jacob Mast and Jeremy Parrish (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 7 day chronic definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_14, TA07_15, and TA08_01 through TA08_09 (see Appendix B).

Results

Chemistry Results (See Table 1, Table 2, Table 3 and Appendix C)

- The total ammonia concentration in the grab sample collected and preserved for chemical analysis was 11 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated un-ionized ammonia concentration was <0.02 mg/L.

- The effluent's dissolved oxygen (3.08 mg/L) exceeded the Class III Marine Criterion (62-302.530(30)) and did not comply with the permitted limit. Carbonaceous biochemical oxygen demand (CBOD), turbidity, fluoride, aluminum, arsenic, chromium and iron were detected in the effluent at levels that comply with Class III Marine Water Quality Criteria (62-302.530, F.A.C.) and/or permitted limits. Total suspended solids (TSS), cadmium, copper, nickel, selenium, silver and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

- Additional grab samples were collected on 4/21/2014 and analyzed for total phosphorus, total ammonia, nitrate and nitrite, and total Kjeldahl nitrogen. See appendix C.

Microbiology (See Table 2 and Appendix C)

- Fecal Coliforms were detected in the effluent at a level that complies with Class III Marine Water Quality Criteria (62-302.530, F.A.C.) and/or the permitted limit.

Algal Growth Potential (See Table 4 and Appendix C)

- An aliquot of the AGP sample was salinity adjusted from an apparent salinity of approximately 1 part per thousand (ppth) to a salinity of approximately 7 ppth by the addition of artificial sea salts to meet the salinity requirements of the test species.

- The salinity adjusted effluent Algal Growth Potential (AGP) was 224 AQ mg dry wt/L of the saltwater species, *Dunaliella tertiolecta.* Raschke and Schultz determined that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication, Marshall Faircloth, et. al. FDEP with Ron Raschke

USEPA Region 4 1987). The analytical chemistry results suggests that the effluent is phosphorus limited (Maloney et al. 1974).

Toxicity Test Results (See Appendix C)

- Tests were performed April 22-29, 2014.

  Americamysis bahia 7-day chronic definitive bioassay – IC25: 43.2%

  Menidia beryllina 7-day chronic definitive bioassay – IC25: > 100%

- The bioassay samples were toxic to the *Americamysis bahia* test organisms which does not comply with the permit limits. The cause of toxicity may be attributed at least in part to the effluent calcium (134% of nominal in the salinity (20 ppth) adjusted sample; 709% of nominal in original sample) and to the un-ionized ammonia concentration (0.95 mg/L) in the 100% sample concentration (calculated based on pH, salinity, temperature and total ammonia as tested). Previous research conducted by the FDEP Biology Section demonstrated that *A. bahia* is much more sensitive to seawater-ion imbalances than is *M. beryllina* (Wolfe, *et al*. 1995). The un-ionized ammonia concentration is similar to concentrations reported to have produced toxicity in *Americamysis bahia* (~1.0 mg/L). (D.C. Miller *et al*, 1990). The increase in pH caused by the addition of artificial sea salts in the bioassay sample was likely the cause of the higher un-ionized ammonia concentration in the bioassay sample in comparison to the un-ionized ammonia concentration in the sample preserved for chemical analysis. The potential un-ionized ammonia toxicity is considered an artifact of the test procedure and should not be used to determine an exceedance of permit conditions.

- Aliquots of the bioassay sample were salinity-adjusted from an apparent salinity of approximately 1 part per thousand (ppth) to a salinity of approximately 20 ppth for the *Americamysis bahia* test and to a salinity of approximately 5 ppth for the *Menidia beryllina test*. Forty Fathoms® marine mix artificial sea salts was used for the salinity adjustments. The salt control used for each test was prepared by diluting 20 ppth salinity artificial seawater (ASW) with well water to a salinity of approximately 1 ppth then salting this solution with artificial sea salts to match the salinity of the appropriate test solution. The purpose of the salt controls was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of the *Americamysis bahia* test. There was 2.5% mortality in the salt controls of the *Menidia beryllina* test.

Conclusion

The effluent samples collected from the EFD-1 NPDES sampling point for this facility on April 21, 23, and 25, 2014 were chronically toxic to the *Americamysis bahia* test organisms but were not toxic to the *Menidia beryllina* test organisms during the 7 day chronic definitive bioassays. The observed toxicity was attributed, at least in part, to excessive calcium in the effluent and to the increase in the un-ionized ammonia concentration in the test solution. The increase in un-ionized ammonia was most likely attributable to the salinity adjustment of the solution. The effluent AGP result was greater than the "problem" threshold for marine receiving waters suggesting that nutrient enrichment may be an issue. The effluent's dissolved oxygen (3.08 mg/L) exceeded the Class III Marine Criterion (62-302.530(30)) and did not comply with the permitted limit. Additional effluent water quality samples collected on April 21, 2014, did not exceed applicable water quality standards or permit conditions.

For additional information concerning this sampling event, including bioassay bench sheets and SRT data, please contact Diane.Power@dep.state.fl.us and/or Joseph.Faircloth@dep.state.fl.us.

Literature Cited

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Wolfe, *et al*. 1995. *Protocols for determining Major-Seawater-Ion Toxicity in Membrane-Technology Water-Treatment Concentrate*. Florida Department of Environmental Protection, Bureau of Laboratories. 96pp.)

Table 1. Effluent limits, Class III Marine Criteria and field parameters

St. Augustine WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent 4/21/14
Sample Depth	m	-	-	-
Temperature	C	-	Report	23.3
pH	SU	6.5 - 8.5	6.5 - 8.5 s	6.8
Specific Conductance	umhos/cm	-	Report	2225
Salinity	ppth	-	-	1.14
Dissolved Oxygen	% saturation	≥ 42 [1]	-	36.4 e
Dissolved Oxygen	mg/L	≥ 5.0	≥ 5.1 s	3.08 e
Flow (3/1/2013-2/28/2014)	MGD	-	≤ 4.95 a	3.93 a
Total Residual Chlorine	mg/L	≤ 0.01	≤ 0.01 s	<0.03 UQ£

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

e - Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average

s - Single sample

Q - Sample held beyond normal holding time

U - Material analyzed for but not detected; value reported is the method detection limit

£ - measurement taken in the FDEP laboratory

1 - The daily average percent DO saturation shall not be below 42 percent saturation in more than 10 percent of values

Table 2. Effluent limits, Class III Marine Criteria and analytical water chemistry data

St. Augustine WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent 4/21/14	Field Blank 4/21/14
Ortho-phosphate	mg P/L	-	Report	0.42	0.004 U
Total Phosphorus	mg P/L	-	Report	0.65	0.002 U
Total Ammonia	mg N/L	-	Report	11	0.002 I
Un-ionized Ammonia (calculated salinity)	mg N/L	-	-	< 0.02 c	-
Nitrate and Nitrite	mg N/L	-	Report	4.7	0.004 U
Total Kjeldahl Nitrogen	mg N/L	-	Report	12	0.080 U
Organic Nitrogen	mg N/L	-	Report	1 c	0.04 c
Total Nitrogen	mg N/L	-	Report	17 c	0.04 c
Total Organic Carbon	mg C/L	-	-	0.46	0.50 U
Chlorophyll *a* - Corrected	ug/L	-	Report	2.8	-
Phaeophytin	ug/L	-	-	0.82 I	-
CBOD, 5 day, N - inhibited	mg/L	-	≤ 60 ps	3.2 AJ	-
Hardness	mg/L	-	-	451	-
Total Suspended Solids	mg/L	-	≤ 60 ps	4 I	-
Total Dissolved Solids	mg/L	-	Report	1180	-
Turbidity	NTU	< 29 t	-	1.5	0.10 U
Color (true)	PCU	-	Report	28	2.5 U
Alkalinity	mg CaCO3/L	-	Report	167 A	0.65 U
Chloride	mg Cl/L	-	Report	440 A	0.20 U
Cyanide	mg CN/L	≤ 1.0	≤ 1.0 s	0.005 U	-
Fluoride	mg F/L	≤ 5.0	≤ 5.0	0.65	0.035 U
Sulfate	mg SO4/L	-	Report	260 A	0.20 U
Alpha, Total	pCi/L	-	Report	5.1 U	0.6 U
Alpha-Counting Error	pCi/L	-	-	3.2	0.4
Microbiology					
Fecal Coliforms ¥	cfu/100 mL	≤ 400 s #	≤ 800 s	25 B	-
Toxicity (Chronic Definitive, IC25)					
Bioassay - Mysid *(Americamysis bahia)*	%	≥ 100	≥ 100	43.2 e	-
Bioassay - Fish *(Menidia beryllina)*	%	≥ 100	≥ 100	>100	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

Table 2 qualifiers

e - Value exceeds the Class III Water Quality Criteria or permit limits
a - Annual average
c - Value is calculated
p - 24 hour flow proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit
¥ - Fecal coliform analysis performed by Columbia Analytical Services, Jacksonville
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Table 3. Effluent limits, Class III Marine Criteria and analytical metals data

St. Augustine WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent 4/21/14	Field Blank 4/21/14
Aluminum	ug/L	≤ 1500	-	101	5.0 U
Arsenic	ug/L	≤ 50	-	1.81	0.25 U
Cadmium	ug/L	≤ 8.8	-	0.081 I	0.050 U
Calcium	mg/L	-	-	95.7	0.075 U
Chromium, Total [1]	ug/L	≤ 50	-	1.9	0.30 U
Copper	ug/L	≤ 3.7	-	0.77 I	0.50 U
Iron	ug/L	≤ 300	-	150	30 U
Lead	ug/L	≤ 8.5	-	0.20 U	0.20 U
Magnesium	mg/L	-	-	51.7	0.040 U
Nickel	ug/L	≤ 8.3	-	0.86 I	0.25 U
Potassium	mg/L	-	-	18.8	0.30 U
Selenium	ug/L	≤ 71	-	0.57 I	0.20 U
Silver	ug/L	≤ 2.3	-	0.043 I	0.025 U
Sodium	mg/L	-	-	270	0.50 U
Zinc	ug/L	≤ 86	-	6.0 I	5.0 U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

e - Value exceeds the Class III Water Quality Criteria or permit limits

1 - Class III Marine Water Quality Criterion (62-302.530(19)(b), F.A.C.) is for chromium-VI

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U - Material analyzed for but not detected; value reported is the method detection limit

Table 4. Measured algal growth potential (AGP; mg dry weight/L) and ratios of nitrogen to phosphorus

St. Augustine WWTF								
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (OP) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
Effluent 4/21/14	*Dunaliella tertiolecta*	224 AQ[1]	not applicable [2]	not applicable [2]	not applicable [2]	not applicable [2]	37.4	25.7

1 - Sample salinity adjusted to 7 ppth
2 - Predictions not applicable to marine matrix
A - Value reported is the mean of two or more determinations
Q - Sample held beyond normal holding time

Appendix A
Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Courtney Gamble	**Contact Number:** 904-256-1625
Facility Name (as it appears on permit): St. Augustine WWTF	**Former Names:** St. Augustine WWTF #1
NPDES Permit Number: FL0021938	**Permit Expiration Date:** November 19, 2014
Physical Address: 501 Riberia Street, St. Augustine, Florida 32084	
District: Northeast	**County:** St. Johns
Function of Facility: Wastewater treatment	
Facility Type: Complete mix activated sludge	**Permitted Capacity (MGD):** 4.950 MGD
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 3.876 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

Monitoring Location Site Number	Description of Monitoring Location
EFA-1	Effluent sample point immediately following disinfection but prior to dechlorination
EFB - 1	Sample point located just before discharge into the chlorine contact chamber.
EFB - 2	Sample point located at the common tank between chlorine contact chamber and post aeration basins.
EFD-1	Effluent sample point after final treatment and prior to discharge to the surface water (immediately following dechlorination if chlorination was used.)
SWU-1	North side of Mickler O'Connell Bridge, center of channel. STORET Number 27010160
SWU-2	The facility point of discharge and at the center of channel. STORET Number 27010153
SWD-1	Channel marker #12. - STORET Number 27010161

Description of Permitted Outfall(s):

D-001 - Approximately 1,600 lineal feet, 30-inch diameter high density polyethylene (HDPE) outfall pipe which is ended with 19-port 36" x 6" HDPE diffusers located approximate 150 feet from the shore and 3 feet from the natural bottom and at 45^{o} from horizontal towards the water surface.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

Complete mix activated sludge wastewater treatment facility consisting of:

- An influent headwork consisting of a mechanically cleaned bar screen, a manually cleaned bar screen used for backup, and a vortex grit removal unit (12 feet in diameter and 6 ft side water depth);
- Two 1.638-million gallon (Mgal) elliptical biological treatment units each of which has an outer channel of 0.799 Mgal, a middle channel of 0.546 Mgal and an inner channel of 0.313 Mgal. The unit is divided into anoxic and aerobic zones and equipped with disc aerators (6 sets/unit). The disc aerators will be removed and replaced with new AIRE-O2 TRITON Process Aerator/Mixer Units which include 6-30 horsepower (Hp), 2-20 Hp, and 2-10 Hp AIRE-O2 TRITON Process Aerator/Mixer drives for fine-bubble aeration and mixing;
- Two secondary clarifiers each of which has a 14 ft side water depth and 7850 ft^2 surface area;
- Two 81,530-gallon chlorine contact chambers each of which has a dimensions of 32.5 ft x 32.5 ft x 10.32 ft (water depth); sodium hypochlorite solution, disinfection agent, is stored in two 2500-gallon storage tanks and pumped to the chlorine contact chamber by three feed pumps with a capacity of 17.2 gph;
- Two 0.182-Mgal post aeration basins each of which has a dimension of 65 ft x 32.5 ft x 10.32 ft side water depth;
- A dechlorination system consisting of a dechlorination contact basin, two-2500-gallon storage tanks to store the sodium bisulfate solution and three feed pumps with a capacity of 17.2 gph each;
- Two 360,000-gallon circular aerobic digesters having a diameter of 65 ft and a side water depth of 15 ft;
- Two 200 GPM belt presses for dewatering; and
- A Vactor Truck receiving area that is used to clean stormwater inlet and sewer lift station pump outs.
- One PAA system, peracetice acid will be use as a primary disinfection agent. Chlorination/dechlorination will be used as a backup disinfection method.

Wastewater biosolids are treated to meet class B stabilization requirements, dewatered and land applied.

List <u>current</u> Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under
(Leave cell blank if not applicable)

			Effluent Limitations	Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number
Flow from Outfall D-001 to Matanzas River	MGD	Max	4.95	Annual Average	Continuous	Recording Flow Meter with Totalizer	EFD-1
		Max	Report	Monthly Average			
		Max	Report	Quarterly (3 Mon Avg)			
Percent Capacity, (TMADF/Permitted Capacity) x 100	PER CENT	Max	Report	Monthly Average	Monthly	Calculated	CAL – 1
BOD, Carbonaceous 5-day, 20ºC	mg/L	Max	20.0	Annual Average	Weekly	24-hour flow proportioned composite	EFD-1
		Max	25.0	Monthly Average			
		Max	40.0	Weekly Average			
		Max	60.0	Single Sample			
CBOD, % Removal, 5-day	percent	Min	85	Monthly Average	Monthly	Calculated	CAL-1
Solids, Total Suspended	mg/L	Max	20.0	Annual Average	Weekly	24-hour flow proportioned composite	EFD-1
		Max	30.0	Monthly Average			
		Max	45.0	Weekly Average			
		Max	60.0	Single Sample			

			Effluent Limitations	Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number
Solids, Total Suspended, % Removal	percent	Min	85	Monthly Average	Monthly	Calculated	CAL-1

Peracetic Acid (PAA) Dosage	mg/L	Min	1.5	Single Sample	Continuous	Meter	EFB – 1
Peracetic Acid (PAA) Residual Or for Backup	mg/L	Max	1.0	Single Sample	Daily (7days/wk)	Grab	EFD – 1
Total Residual llChlorine (For Disinfection)	mg/L	Min	0.5	Single Sample	Continuous	Meter	EFA – 1
Chlorine, Total Residual (For Dechlorination)	mg/L	Max	0.01	Single Sample	Daily (7days/wk)	Grab	EFD-1
Coliform, Fecal	#/100mL	Max	200	Annual Average	Weekly	Grab	EFB-2
		Max	200	Monthly Geometric Mean			
		Max	800	Single Sample			
Enterococci	#/100 ML	Max	35	Monthly Geometric Mean	5 samples on nonconsecutive days over a 30-day period or every 6 days.	Grab	EFB-2
		Max	Report	Single Sample			
pH	s.u.	Min	6.5	Single Sample	Continuous	Meter	EFD-1
		Max	8.5	Single Sample			
Oxygen, Dissolved (DO)	mg/L	Min	5.1	Single Sample	Daily 7days/week	Grab	EFD-1
Nitrogen, Total Kjeldahl as N	mg/L	Max	Report	Annual Average	Weekly	24-hour flow proportioned composite	EFD-1

		Max	Report	Monthly Average			
		Max	Report	Weekly Average			
		Max	Report	Single Sample			
Nitrogen, Total as N	mg/L	Max	Report	Annual Average	Weekly	24-hour flow proportioned composite	EFD-1
		Max	Report	Monthly Average			
		Max	Report	Single Sample			
Nitrogen, Total Mass Load, as N	Lbs/Mon	Max	Report	Monthly Total	Monthly	Calculated	CAL – 3
	Lbs/Yr	Max	Report	Annual Total	Monthly		
Total Recoverable Lead	µg/L	Max	8.5	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1
Total Recoverable Aluminum	mg/L	Max	1.5	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1
Total Recoverable Iron	µg/L	Max	300.0	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1
Total Dissolved Solid (TDS)	mg/L	Max	Report	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1
Chlorides (Cl^-)	mg/L	Max	Report	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1

Sulfate, Dissolved (SO_4^{2-})	mg/L	Max	Report	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1
Alpha, Gross Particle Activity	Picocuries /L	Max	Report	Single Sample	Monthly	24-hour flow proportioned composite	EFD-1
Ammonia, Total as N	mg/L	Max	Report	Single Sample	Quarterly	24-hour flow proportioned composite	EFD-1
Nitrogen, Organic, Total as N	mg/L	Max	Report	Single Sample	Quarterly	Calculated	CAL-5
NO2+NO3, as N	mg/L	Max	Report	Single Sample	Quarterly	24-hour flow proportioned composite	EFD-1
Phosphorus in Total Orthophosphate as P	mg/L	Max	Report	Single Sample	Quarterly	Grab-Filtered	EFD-1
Phosphorus, Total (as P)	mg/L	Max	Report	Single Sample	Quarterly	24-hour flow proportioned composite	EFD-1
Mercury, Total Recoverable	µg/L	Max	0.025	Single Sample	Quarterly	Grab	EFD-1
Cyanide, Total (as CN)	µg/L	Max	1.0	Single Sample	Quarterly	Grab	EFD-1
Fluorides	mg/L	Max	5.0	Single Sample	Quarterly	24-hour flow proportioned composite	EFD-1
Alkalinity, as CaCO3	mg/L	Max	Report	Single Sample	Quarterly	24-hour flow proportioned composite	EFD-1
Water Salinity	mg/L	Max	Report	Single Sample	Quarterly	24-hour flow proportioned composite	EFD-1

Conductance, Specific	µΩ/cm (Micromhos per cm)	Max	Report	Single Sample	Quarterly	Meter	EFD-1
Chronic Whole Effluent Toxicity, 7-Day IC_{25} (*Americamysis bahia*)	percent	Min	100	Single Sample	Semi-Annually (Twice per year)	24-hour flow proportioned composite	EFD-1
Chronic Whole Effluent Toxicity, 7-Day IC_{25} (*Menidia beryllina*)	percent	Min	100	Single Sample	Semi-Annually (Twice per year)	24-hour flow proportioned composite	EFD-1
BOD, Carbonaceous 5-day, 20ºC	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Solids, Total Suspended	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Oxygen, Dissolved (DO)	mg/L	Min	Report	Single Sample	Semi-Annually (Twice per year)	Meter	SWU-1 SWU-2 SWD-1
pH	S.U.	Max	Report	Single Sample	Semi-Annually (Twice per year)	Meter	SWU-1 SWU-2 SWD-1
Temperature (ºC), Water	Deg C	Max	Report	Single Sample	Semi-Annually (Twice per year)	Meter	SWU-1 SWU-2 SWD-1
Specific Conductance	UMHO/ CM	Max	Report	Single Sample	Semi-Annually (Twice per year)	Meter	SWU-1 SWU-2 SWD-1
Salinity of water	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Meter	SWU-1 SWU-2 SWD-1

Nitrogen, Ammonia, Total (as N)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Nitrogen, Organic, Total (as N)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Nitrite plus Nitrate, Total (as N)	mg/L	Max	Report	Single Sample	Semi-Annually; twice per year	Grab	SWU-1 SWU-2 SWD-1
Nitrogen, Total	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab and Filtered	SWU-1 SWU-2 SWD-1
Phosphorus, Total (as P)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Chlorophyll-a	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Tide Stage	Feet	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1

Alkalinity, Total (as $CaCO_3$)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Color	PT-CO	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1
Chloride (as Cl-)	mg/L	Max	Report	Single Sample	Semi-Annually (Twice per year)	Grab	SWU-1 SWU-2 SWD-1

PART I: Continued	
Receiving Waters: Matanzas River– WBID 2363G1	**Classification (indicate whether fresh or marine):** Class III Marine Water

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

3. The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

   a. Effluent Limitation

      (1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC_{25}) shall not be less than 100% effluent. [Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.]

      (2) For acute whole effluent toxicity, the 96-hour LC_{50} shall not be less than 100% effluent in any test. [Rule 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]

   b. Monitoring Frequency

      (1) Routine toxicity tests shall be conducted once every six months, starting within 6 months of the most recent test, and lasting for the duration of the permit.

   c. Sampling Requirements

      (1) For each routine test or additional follow-up test conducted, a total of **three** *flow proportional 24-hour composite* samples of final effluent shall be collected at sampling location EFD-1 and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8.

      (2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.

      (3) Samples for routine and additional follow-up tests shall not be collected on the same day.

   d. Test Requirements

      (1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: **100%, 50%, 25%**, **12.5%**, and **6.25%** final effluent.

      (2) The permittee shall conduct 7-day survival and growth chronic toxicity tests with a mysid shrimp, ***Americamysis bahia***, Survival, Growth and Fecundity Test, and an inland silverside, ***Menidia beryllina***, Larval Survival and Growth Test, concurrently.

      (3) All test species, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, 3rd ed., EPA-821-R-02-014. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.

      (4) The control water and dilution water shall be prepared with artificial sea salts as described in EPA-821-R-02-014, Section 7.2. The test salinity shall be determined as follows:

         (a) For the *Americamysis bahia* bioassays, the effluent shall be adjusted to a salinity of 20 parts per thousand (ppt) with artificial sea salts. The salinity of the control/dilution water shall be 20 ppt. If the salinity of the effluent is greater than 20 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.

         (b) For the *Menidia beryllina* bioassays, the effluent shall be adjusted to 5 ppt with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 5 ppt. If the salinity of the effluent is greater

than 5 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent

(c) If the salinity of the effluent requires adjustment, a salinity adjustment control should be prepared and included with each bioassay. The salinity adjustment control is intended to identify toxicity resulting from adjusting the effluent salinity with artificial sea salts. To prepare the salinity adjustment control, dilute the control/dilution water to the salinity of the effluent and adjust the salinity of the salinity adjustment control at the same time and to the same salinity that the salinity of the effluent is adjusted using the same artificial sea salts.

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or any test does not meet "test acceptability criteria", the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-014, Section 14.12 (*Americamysis bahia*) and Section 13.12 (*Menidia beryllina*). The repeat test shall begin within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) shall be terminated with the conclusion that the test fails and constitutes non-compliance.

(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6, and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be entered on the Discharge Monitoring Report (DMR) as the calculated IC_{25} for each test species.

(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and e-mailed or mailed to the Department at the address below within 30 days after the last day of the test.

(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and e-mailed or mailed within 30 days after the last day of the second valid additional follow-up test.

(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.

(5) The same bioassay data shall not be reported as the results of more than one test.

(6) All bioassay laboratory reports shall be e-mailed or mailed to *Jacksonville*:

Florida Department of Environmental Protection
Northeast District – Wastewater Section
7777 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

g. Test Failures

(1) A test fails when the test results do not meet the limits in 14.a.

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 14.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 14.d.

(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control are run. All test results shall be statistically analyzed according to the Appendices in EPA-821-R-02-013.

(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.

(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.

(b) The Department shall review and approve the plan before initiation.

(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.

(d) Progress reports shall be submitted quarterly to the Department at the address above.

(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 14.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 14.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.

(f) Upon completion of four consecutive, valid routine tests that demonstrate compliance with the effluent limitation in 14.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive valid routine whole effluent toxicity tests.

(g) If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of terminating the plan.

(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in 14.(a)(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.

(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity test failures.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
None active

Facility Mixing Zone Details (if applicable):
N/A – diffuser for temperature (manatee control)

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:
CCC/PAB offline for scheduled recoating recently, project complete & back online

Date	Parameter and Units	Limit	Result
2/11/14 – 2/12/14	TSS % removal		
7/21/13	PAA dosage	1.3ppm min	0.3ppm

Describe previous FYI and WQBEL study:

Toxics Sampling Inspection (XSI)
Date Sampled: November 26, 2007
Results: Copper and zinc were detected in the effluent at levels that complied with Class III Marine Water Quality Criteria (62-302.530 F.A.C) and facility permit limits. Aluminum, arsenic, iron, lead and nickel were present in the effluent at levels between the minimum detection limit (MDL) and practical quantitation limit (PQL), which complied with Class III Marine Water Quality Criteria and fam,cility permit limits. Organic pollutants were not detected in the effluent. In sediments near the outfall (Site 1), six hydrocarbons (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene and pyrene) were detected at levels between the MDL and PQL and which exceeded the Threshold Effects Level (TEL) values for organic constituents. The same was true for benzo(b)fluoranthene at Site 2, farther from the outfall along the effluent dilution gradient. Sediment metal content decreased with increasing distance from the outfall; sediment metal concentrations were all below the corresponding TELs.

Compliance Biomonitoring Inspection (CBI)
Date Sampled: November 25-26, 2007
Results: The effluent samples were not toxic to the fish, *Menidia beryllina,* or to the mysid, *Americamysis bahia,* during the four 96-hour acute screening bioassays and therefore, complied with Class III Marine Water Quality Criteria (62-302.500) F.A.C.).

Impact Bioassessment Inspection (IBI)
Date Sampled: November 28, 2007
Results: The effluent pipe was found to be broken and effluent was being discharged into the adjacent salt marsh in addition to the designated receiving water, the Matanzas River. Sediment percent organic content was approximately 7 times greater near the outfall (Site 1, 6.8%) than at the site farthest from the outfall along the effluent dilution gradient, Site 4 (1%). The sediment discontinuity layer, a measure of oxygen penetration, was deeper at Site 4 (average 122 mm) than at Sites 1-3 (~8.3 to 42 mm depth). Quantitative measurements of benthic macroinvertebrate assemblages from ponar samples showed no signs of degradation related to the facility's effluent despite the presence of organic constituents and higher metal content in sediments nearer the outfall. Shifts in community composition can most likely be attributed to differences in substrate composition along the effluent gradient.

Describe previous or current Enforcement Actions (including WLs):
WL-11-012-DW: SSO
WL-10-101-DW: Cyanide exceedances
CO 09-0251: SSO's
CO 09-3590: SSO
CO 11-0866: Ref. WL11-012

Describe any violations or problems noted in previous inspection:
N/A

Discuss whether DMR trends within previous five years are improving or declining:
Monthly average flow has increased approximately 1 MGD since 2011
Concentration parameters have increase slightly as well, indicative of flow increase

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):
Facility now uses PAA disinfection

PART II: Sampling Event Information

Date(s) sample collected:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**

Flow During Sample Collection for each outfall(MGD):

Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):

Describe Discharge during Sampling Event:
☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**

Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:

Appendix B
Explanation of measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/sop/sops.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Chlorophyll *a* Content

Chlorophyll *a* content is an estimate algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., and/or 62-302.530(47)(b), F.A.C..

(6) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 10.0 mg dry weight/L represents a “problem” threshold for marine receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP in a low salinity sample under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N:P) is less than 10:1, nitrogen limitation of algal production is likely. When the N:P ratio is 20:1 or greater, phosphorus limitation is likely (EPA-822-B-00-002). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds

present in the water sample tested and may constitute an exceedance of 62-302.530(61) F.A.C. Expected AGP is not calculated for marine samples incubated with *Dunaliella*.

(7) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix C
Chemical Analyses of Effluent

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 10:40	Effluent	AGP/LN	Algal Growth Potential	224 AQ	mg DryWt/L	3	3
4/21/2014 10:40	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.2 AJ	mg/L	0.2	2
4/21/2014 10:40	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.82 I	ug/L	0.4	1.2
4/21/2014 10:40	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.8	ug/L	0.55	1.7
4/21/2014 10:40	Effluent	Overflow	Fecal Coliforms-Membrane Filter	25 B	cfu/100 mL	2	2
4/21/2014 10:40	Effluent	Toxicology	Bioassay-Chron-Def-SW-Fish, NOEC	100	NOEC		
4/21/2014 10:40	Effluent	Toxicology	Bioassay-Chron-Def-SW-Mysid, NOEC	6.25	NOEC		
4/21/2014 10:40	Effluent	Toxicology	Bioassay-Chron-Def-SW-Mysid, IC25	43.2	IC25		
4/21/2014 10:40	Effluent	Toxicology	Bioassay-Chron-Def-SW-Fish, IC25	100 L	IC25		
4/21/2014 10:40	Effluent	Metals	Silver	0.043 I	ug/L	0.025	0.1
4/21/2014 10:40	Effluent	Metals	Nickel	0.86 I	ug/L	0.25	1
4/21/2014 10:40	Effluent	Metals	Iron	150	ug/L	30	120
4/21/2014 10:40	Effluent	Metals	Zinc	6.0 I	ug/L	5	20
4/21/2014 10:40	Effluent	Metals	Magnesium	51.7	mg/L	0.04	0.16
4/21/2014 10:40	Effluent	Metals	Chromium	1.9	ug/L	0.3	1.2
4/21/2014 10:40	Effluent	Metals	Sodium	270	mg/L	2.5	10
4/21/2014 10:40	Effluent	Metals	Arsenic	1.81	ug/L	0.25	1
4/21/2014 10:40	Effluent	Metals	Selenium	0.57 I	ug/L	0.2	0.8
4/21/2014 10:40	Effluent	Metals	Potassium	18.8	mg/L	0.3	1.2
4/21/2014 10:40	Effluent	Metals	Aluminum	101	ug/L	5	20
4/21/2014 10:40	Effluent	Metals	Lead	0.20 U	ug/L	0.2	0.8
4/21/2014 10:40	Effluent	Metals	Cadmium	0.081 I	ug/L	0.05	0.2
4/21/2014 10:40	Effluent	Metals	Calcium	95.7	mg/L	0.075	0.3
4/21/2014 10:40	Effluent	Metals	Copper	0.77 I	ug/L	0.5	1
4/21/2014 10:40	Effluent	Nutrients	TDS	1.18E+03	mg/L	15	25
4/21/2014 10:40	Effluent	Nutrients	Kjeldahl Nitrogen	12	mg N/L	0.4	1
4/21/2014 10:40	Effluent	Nutrients	Turbidity	1.5	NTU	0.1	0.1
4/21/2014 10:40	Effluent	Nutrients	Color (true)	28	PCU	2.5	6
4/21/2014 10:40	Effluent	Nutrients	Cyanide	0.005 U	mg CN/L	0.005	0.02
4/21/2014 10:40	Effluent	Nutrients	Total-P	0.65	mg P/L	0.005	0.05
4/21/2014 10:40	Effluent	Nutrients	Ammonia-N	11	mg N/L	0.4	1
4/21/2014 10:40	Effluent	Nutrients	Kjeldahl Nitrogen	12	mg N/L	0.4	1
4/21/2014 10:40	Effluent	Nutrients	NO2NO3-N	4.7	mg N/L	0.08	0.2
4/21/2014 12:55	Effluent	Nutrients	Cyanide	0.005 U	mg CN/L	0.005	0.02

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 10:40	Effluent	Nutrients	Organic Carbon	11:00 AM	mg C/L	1	2
4/21/2014 10:40	Effluent	Nutrients	Chloride	440 A	mg Cl/L	4	10
4/21/2014 10:40	Effluent	Nutrients	Total-P	0.63	mg P/L	0.005	0.05
4/21/2014 10:40	Effluent	Nutrients	O-Phosphate-P	0.42	mg P/L	0.08	0.2
4/21/2014 10:40	Effluent	Nutrients	Fluoride	0.65	mg F/L	0.035	0.1
4/21/2014 10:40	Effluent	Nutrients	Ammonia-N	10	mg N/L	0.4	1
4/21/2014 10:40	Effluent	Nutrients	Sulfate	260 A	mg SO4/L	4	10
4/21/2014 10:40	Effluent	Nutrients	NO2NO3-N	4.9	mg N/L	0.08	0.2
4/21/2014 10:40	Effluent	Nutrients	TSS	4 I	mg/L	2	10
4/21/2014 10:40	Effluent	Nutrients	Alkalinity	167 A	mg CaCO3/L	0.65	2.5
4/21/2014 10:40	Effluent	Overflow	Alpha-Counting Error	3.2	pCi/L	5.1	0
4/21/2014 10:40	Effluent	Overflow	Alpha, Total	5.1 U	pCi/L	5.1	
4/21/2014 10:40	Effluent	Pesticides	Fonofos	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Hexazinone	0.028 U	ug/L	0.028	0.11
4/21/2014 10:40	Effluent	Pesticides	Metolachlor	0.057 U	ug/L	0.057	0.23
4/21/2014 10:40	Effluent	Pesticides	Mevinphos	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Disulfoton	0.0047 U	ug/L	0.0047	0.019
4/21/2014 10:40	Effluent	Pesticides	Ethion	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Prometon	0.019 U	ug/L	0.019	0.075
4/21/2014 10:40	Effluent	Pesticides	Simazine	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Atrazine	0.025 U	ug/L	0.025	0.1
4/21/2014 10:40	Effluent	Pesticides	Ametryn	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.075
4/21/2014 10:40	Effluent	Pesticides	Malathion	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Chlorpyrifos Ethyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Bromacil	0.038 U	ug/L	0.038	0.15
4/21/2014 10:40	Effluent	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.075
4/21/2014 10:40	Effluent	Pesticides	Chlorpyrifos Methyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Azinphos Methyl	0.019 UJ	ug/L	0.019	0.075
4/21/2014 10:40	Effluent	Pesticides	Alachlor	0.057 U	ug/L	0.057	0.23
4/21/2014 10:40	Effluent	Pesticides	Phorate	0.0047 U	ug/L	0.0047	0.019
4/21/2014 10:40	Effluent	Pesticides	Norflurazon	0.028 U	ug/L	0.028	0.11
4/21/2014 10:40	Effluent	Pesticides	Naled	0.038 U	ug/L	0.038	0.15
4/21/2014 10:40	Effluent	Pesticides	Ethoprop	0.0047 U	ug/L	0.0047	0.019
4/21/2014 10:40	Effluent	Pesticides	Demeton	0.023 U	ug/L	0.023	0.091
4/21/2014 10:40	Effluent	Pesticides	Butylate	0.019 U	ug/L	0.019	0.075

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 10:40	Effluent	Pesticides	Atrazine Desethyl	0.011 U	ug/L	0.011	0.044
4/21/2014 10:40	Effluent	Pesticides	Metalaxyl	0.038 UJ	ug/L	0.038	0.15
4/21/2014 10:40	Effluent	Pesticides	Fenamiphos	0.028 U	ug/L	0.028	0.11
4/21/2014 10:40	Effluent	Pesticides	Atrazine Desisopropyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.075
4/21/2014 10:40	Effluent	Pesticides	Diazinon	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Pesticides	Parathion Methyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	58
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	ug/L	2.9	12
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	ug/L	2.9	12
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Hexachloroethane	2.9 U	ug/L	2.9	12
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.6 U	ug/L	9.6	38
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	14 UJ	ug/L	14	58
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Isophorone	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.7
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.9 U	ug/L	2.9	12
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.7
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Benzidine	96 U	ug/L	96	380
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	ug/L	2.9	12

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 10:40	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.7
4/21/2014 10:40	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	ug/L	2.9	12
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	ug/L	2.9	12
4/21/2014 10:40	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.7
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Phenol	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Dimethyl phthalate	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.96 U	ug/L	0.96	3.8
4/21/2014 10:40	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.7
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.77
4/21/2014 10:40	Effluent	Nutrients	Temperature	23.3	C		
4/21/2014 10:40	Effluent	Nutrients	Dissolved Oxygen	3.08	mg/L		
4/21/2014 10:40	Effluent	Nutrients	Temperature	23.3	C		
4/21/2014 10:40	Effluent	Nutrients	Dissolved Oxygen	3.08	mg/L		
4/21/2014 10:40	Effluent	Nutrients	Specific Conductance	2225	umhos/cm		
4/21/2014 10:40	Effluent	Nutrients	pH	6.82			
4/21/2014 10:40	Effluent	Nutrients	pH	6.82			
4/21/2014 10:40	Effluent	Nutrients	Specific Conductance	2225	umhos/cm		
4/21/2014 12:55	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
4/21/2014 12:55	Field Blank	Metals	Silver	0.025 U	ug/L	0.025	0.1
4/21/2014 12:55	Field Blank	Metals	Lead	0.20 U	ug/L	0.2	0.8
4/21/2014 12:55	Field Blank	Metals	Cadmium	0.050 U	ug/L	0.05	0.2

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 12:55	Field Blank	Metals	Nickel	0.25 U	ug/L	0.25	1
4/21/2014 12:55	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
4/21/2014 12:55	Field Blank	Metals	Iron	30 U	ug/L	30	120
4/21/2014 12:55	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
4/21/2014 12:55	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
4/21/2014 12:55	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
4/21/2014 12:55	Field Blank	Metals	Copper	0.50 U	ug/L	0.5	1
4/21/2014 12:55	Field Blank	Metals	Aluminum	5.0 U	ug/L	5	20
4/21/2014 12:55	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
4/21/2014 12:55	Field Blank	Metals	Arsenic	0.25 U	ug/L	0.25	1
4/21/2014 12:55	Field Blank	Metals	Chromium	0.30 U	ug/L	0.3	1.2
4/21/2014 12:55	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
4/21/2014 12:55	Field Blank	Nutrients	Ammonia-N	0.002 I	mg N/L	0.002	0.005
4/21/2014 12:55	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
4/21/2014 12:55	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
4/21/2014 12:55	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
4/21/2014 12:55	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
4/21/2014 12:55	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
4/21/2014 12:55	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
4/21/2014 12:55	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
4/21/2014 12:55	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
4/21/2014 12:55	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
4/21/2014 12:55	Field Blank	Nutrients	Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
4/21/2014 12:55	Field Blank	Overflow	Alpha, Total	0.6 U	pCi/L	0.6	
4/21/2014 12:55	Field Blank	Overflow	Alpha-Counting Error	0.4	pCi/L	0.6	
4/21/2014 12:55	Field Blank	Pesticides	Ethion	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Prometon	0.019 U	ug/L	0.019	0.075
4/21/2014 12:55	Field Blank	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.075
4/21/2014 12:55	Field Blank	Pesticides	Ametryn	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Atrazine	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Naled	0.038 U	ug/L	0.038	0.15
4/21/2014 12:55	Field Blank	Pesticides	Phorate	0.0047 U	ug/L	0.0047	0.019
4/21/2014 12:55	Field Blank	Pesticides	Fenamiphos	0.028 U	ug/L	0.028	0.11
4/21/2014 12:55	Field Blank	Pesticides	Fonofos	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Metolachlor	0.056 U	ug/L	0.056	0.23
4/21/2014 12:55	Field Blank	Pesticides	Malathion	0.0094 U	ug/L	0.0094	0.038

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 12:55	Field Blank	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.075
4/21/2014 12:55	Field Blank	Pesticides	Azinphos Methyl	0.019 UJ	ug/L	0.019	0.075
4/21/2014 12:55	Field Blank	Pesticides	Bromacil	0.038 U	ug/L	0.038	0.15
4/21/2014 12:55	Field Blank	Pesticides	Butylate	0.019 U	ug/L	0.019	0.075
4/21/2014 12:55	Field Blank	Pesticides	Demeton	0.023 U	ug/L	0.023	0.09
4/21/2014 12:55	Field Blank	Pesticides	Diazinon	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Ethoprop	0.0047 U	ug/L	0.0047	0.019
4/21/2014 12:55	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Disulfoton	0.0047 U	ug/L	0.0047	0.019
4/21/2014 12:55	Field Blank	Pesticides	Metalaxyl	0.038 UJ	ug/L	0.038	0.15
4/21/2014 12:55	Field Blank	Pesticides	Mevinphos	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Parathion Methyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Alachlor	0.056 U	ug/L	0.056	0.23
4/21/2014 12:55	Field Blank	Pesticides	Atrazine Desisopropyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Hexazinone	0.028 U	ug/L	0.028	0.11
4/21/2014 12:55	Field Blank	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.075
4/21/2014 12:55	Field Blank	Pesticides	Norflurazon	0.028 U	ug/L	0.028	0.11
4/21/2014 12:55	Field Blank	Pesticides	Simazine	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Pesticides	Atrazine Desethyl	0.0094 U	ug/L	0.0094	0.038
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14 UJ	ug/L	14	57
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.4 U	ug/L	9.4	38
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Isophorone	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Benzidine	94 U	ug/L	94	380
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Pentachlorophenol	2.8 U	ug/L	2.8	11
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Phenol	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.94 U	ug/L	0.94	3.8
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5

Date_Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
4/21/2014 12:55	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94 U	ug/L	0.94	3.8
4/23/2014 9:00	Effluent	Nutrients	pH	7.3			
4/23/2014 9:00	Effluent	Nutrients	Specific Conductance	2350	umhos/cm		
4/23/2014 9:00	Effluent	Nutrients	Dissolved Oxygen	7.01	mg/L		
4/23/2014 9:00	Effluent	Nutrients	Temperature	23.2	C		
4/23/2014 9:00	Effluent	Nutrients	Sample Depth	0.2	m		
4/25/2014 9:05	Effluent	Nutrients	Sample Depth	0.3	m		
4/25/2014 9:05	Effluent	Nutrients	Specific Conductance	1880	umhos/cm		
4/25/2014 9:05	Effluent	Nutrients	Temperature	24.13	C		
4/25/2014 9:05	Effluent	Nutrients	pH	7.34			
4/25/2014 9:05	Effluent	Nutrients	Dissolved Oxygen	7.11	mg/L		

EPA End Sheet

The Bioassay of St. Augustine WWTF effluent sampled on April 21, 2014. NPDES #FL0021938.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 1 9 3 8 11	12 1 4 0 4 2 1	18 **B**	19 **S**	20 1

Remarks

66

The Priority Pollutants Analysis of St. Augustine WWTF effluent sampled on April 21, 2014. NPDES #FL0021938.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 1 9 3 8 11	12 1 4 0 4 2 1	18 **X**	19 **S**	20 1

Remarks

66

Biological Analyses of St. Augustine WWTF effluent sampled on April 21, 2014. NPDES #FL0021938.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 1 9 3 8 11	12 1 4 0 4 2 1	18 **S**	19 **S**	20 1

Remarks

66