AUTHORIZATION TO DISCHARGE UNDER THE
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended, the

City of East Providence
145 Taunton Avenue
East Providence, Rhode Island 02914

is authorized to discharge from a facility located at

East Providence Water Pollution Control Facility
1 Crest Avenue
East Providence, Rhode Island 02915

to receiving waters named

Providence River

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on _____.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on August 14, 2007.

This permit consists of 23 pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this _____ day of_____, _____.

DRAFT

_____
Angelo S. Liberti, P.E., Chief of Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

PART I

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A. (final discharge after dechlorination)
   Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Flow	14.2 MGD	--- MGD				Continuous	Recorder
BOD_5 (Nov. 1 – Apr. 30)	2600	4300	22 mg/l	33 mg/l	36 mg/l	3/Week	24-Hr. Comp.
$CBOD_5$ (May 1 – Oct. 31)	1184	1776	10 mg/l	10 mg/l	15 mg/l	3/Week	24-Hr. Comp.
BOD_5 - % Removal	85%					1/Month	Calculated
TSS (Nov. 1 – Apr. 30)	2600	4300	22 mg/l	33 mg/l	36 mg/l	3/Week	24-Hr. Comp.
TSS (May 1 – Oct. 31)	2368	3553	20 mg/l	20 mg/l	30 mg/l	3/Week	24-Hr. Comp.
TSS - % Removal	85%					1/Month	Calculated
Settleable Solids				--- ml/l	--- ml/l	1/Day	Grab

--- Signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Sampling for TSS and BOD_5 shall be performed Tuesday, Thursday and either Saturday or Sunday. All BOD_5 and TSS samples shall be taken on the influent and effluent with appropriate allowances for hydraulic detention (flow-through) time.

Sampling for Flow and Settleable Solids shall be performed Sunday-Saturday.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 001A. (Final discharge from the WPCF after dechlorination)

PART I

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A. (final discharge after dechlorination)
Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Enterococci			35 cfu[1] / 100 ml		276 cfu[1] / 100 ml	3/Week	Grab
Fecal Coliform			--- MPN[1] / 100 ml		--- MPN[1] / 100 ml	3/Week	Grab
Total Residual Chlorine (TRC)			190 ug/l[2]		190 ug/l[2]	3/Day	Grab
pH			(6.0 SU)		(9.0 SU)	2/Day	Grab

[1]Two (2) of the three (3) Enterococci samples are to be taken on Tuesday and Thursday. The Fecal Coliform samples and one of the required TRC samples shall be taken at the same time as the Enterococci samples. The Geometric Mean shall be used to obtain the "weekly average" and the "monthly average."

[2]The use of a continuous TRC recorder after chlorination and prior to dechlorination is required to provide a record that proper disinfection was achieved at all times. Compliance with these limitations shall be determined by taking three grab samples of the final effluent (after dechlorination) per day, Monday - Friday (except holidays), equally spaced over one (1) day with a minimum of three hours between grabs, and on Saturdays, Sundays, and Holidays by taking at least (2) grab samples each day with a minimum of two (2) hours between grabs. The maximum daily and average monthly values are to be computed from the averaged grab sample results for each day. The following methods may be used to analyze the grab samples: (1) DPD Spectrophotometric, EPA No. 330.5 or Standard Methods (18th Edition) No. 4500-Cl G; (2) DPD Titrimetric, EPA No. 330.4 or Standard Methods (18th Edition) No. 4500-Cl F; (3) Amperometric Titration, EPA No. 330.1 or Standard Methods (18th Edition) No. 4500-Cl D or ASTM No. D1253-86(92).

*Values in parentheses () are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

Sampling for pH and Chlorine Residual shall be performed Sunday-Saturday.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 001A. (Final discharge from the WPCF after dechlorination)

PART I

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

3. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A. (final discharge after dechlorination)
   Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Oil and Grease					--- mg/l	1/Month	3 Grabs[1]
TKN			--- mg/l		--- mg/l	1/Week	24-Hr. Comp.
Nitrate, Total (as N)			--- mg/l		--- mg/l	1/Week	24-Hr. Comp.
Nitrite, Total (as N)			--- mg/l		--- mg/l	1/Week	24-Hr. Comp.
Nitrogen, Total [TKN + Nitrate + Nitrite, as N]							
(Nov. 1-Apr. 30)	--- lb/day		--- mg/l[2]		--- mg/l	1/week	Calculated
(May 1-Oct. 31)	694 lb/day		5.9 mg/l		--- mg/l	1/week	Calculated

[1] Three (3) grab samples shall be equally spaced over the course of an eight (8) hour shift with a minimum of three (3) hours between samples. Each grab sample must be analyzed individually and the maximum values reported.

[2] The permittee shall operate the treatment facility to reduce the discharge of Total Nitrogen, during the months of November through April, to the maximum extent possible using all available treatment equipment in place at the facility, except methanol addition.

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following locations: Outfall 001A. (Final discharge from the WPCF after dechlorination)

PART I

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

4. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A. (final discharge after dechlorination)

   Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Copper, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.
Cyanide[1]			11.7 ug/l		11.7 ug/l	1/Month	Composite[2]
Cadmium, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.
Chromium, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.
Lead, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.
Zinc, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.
Nickel, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.
Aluminum, Total[1]			--- ug/l		--- ug/l	1/Quarter	24-Hr. Comp.

--- Signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

[1]Monitoring data may be obtained in conjunction with bioassay testing.

[2]Compliance with these limitations shall be determined by taking three (3) grab samples per day, equally spaced over one (1) day with a minimum of three (3) hours between grabs, and preserved immediately upon collection. All three (3) samples shall be composited then analyzed for available Cyanide.

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following locations: Outfall 001A. (Final Discharge from the WCPF after dechlorination).

PART I

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

5. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A. (final discharge after dechlorination)
   Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Mysidopsis bahia LC50[1]					100% or Greater[2]	1/Quarter	24-Hr. Comp.
Menidia spp. LC50[1]					100% or Greater[2]	1/Quarter	24-Hr. Comp.

[1]LC_{50} is defined as the concentration of wastewater that causes mortality to 50% of the test organisms.

[2]The 100% or greater limit is defined as a sample which is composed of 100% effluent.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 001A in accordance with I.B. of the permit. (final discharge after dechlorination)

6. a. The pH of the effluent shall not be less than 6.0 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

b. The discharge shall not cause visible discoloration of the receiving waters.

c. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

d. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and 5-day biochemical oxygen demand. The percent removal shall be based on monthly average values.

e. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

f. The permittee shall analyze its effluent annually for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Table II and III. The results of these analyses shall be submitted to the Department of Environmental Management by January 15th for the previous calendar year. All sampling and analysis shall be done in accordance with EPA Regulations, including 40 CFR, Part 136; grab and composite samples shall be taken as appropriate.

g. This permit serves as the State's Water Quality Certificate for the discharges described herein.

B. BIOMONITORING REQUIREMENTS AND INTERPRETATION OF RESULTS

1. General

Beginning on the effective date of the permit, the permittee shall perform eight (8) acute toxicity tests per year on samples collected from discharge outfall 001A. The permittee shall conduct the tests during dry weather periods (no rain within forty-eight (48) hours prior to or during sampling unless approved by RIDEM) according to the following test frequency and protocols. Acute data shall be reported as outlined in Section I.B.10. The State may require additional screening, range finding, definitive acute or chronic bioassays as deemed necessary based on the results of the initial bioassays required herein. Indications of toxicity could result in requiring a Toxicity Reduction Evaluation (TRE) to investigate the causes and to identify corrective actions necessary to eliminate or reduce toxicity to an acceptable level.

2. Test Frequency

On four (4) sampling events, (one (1) each calendar quarter) the permittee will conduct forty-eight (48) hour acute definitive toxicity tests on the two (2) species listed below, for a total of eight (8) acute toxicity tests per year. This requirement entails performing two- (2-) species testing as follows:

Species	Test Type Two (2) Species Test	Frequency Four Times Annually
Mysids (Mysidopsis bahia)	Definitive 48-Hour Acute Static (LC_{50})	Quarterly

Species	Test Type	Frequency
Silversides (Menidia spp.)	Definitive 48-Hour Acute Static (LC_{50})	Quarterly

3. Testing Methods

Acute definitive toxicity tests shall be conducted in accordance with the test methods and protocols listed in 40 CFR 136, incorporating any deviations from protocol or additional methods as approved by the Director of RIDEM.

4. Sample Collection

For each sampling event a twenty-four (24) hour flow proportioned composite final effluent sample shall be collected during a dry weather (no rain forty-eight (48) hours prior to or during sampling unless approved by RIDEM). This sample shall be kept cool (at $4^{o}C$) and testing shall begin within twenty-four (24) hours after the last sample of the composite is collected. In the laboratory, the sample will be split into two (2) subsamples, after thorough mixing, for the following:

A: Chemical Analysis
B: Acute Toxicity Testing

All samples held overnight shall be refrigerated at $4^{o}C$. Grab samples must be used for pH and temperature.

5. Salinity Adjustment

Prior to the initiation of testing, the effluent must be adjusted to make the salinity of the effluent equal to that of the marine dilution water. The test solution must be prepared by adding non-toxic dried ocean salts to a sufficient quantity of 100% effluent to raise the salinity to the desired level. After the addition of the dried salts, stir gently for thirty (30) to sixty (60) minutes, preferably with a magnetic stirrer, to ensure that the salts are in solution. It is important to check the final salinity with a refractometer or salinometer. Salinity adjustments following this procedure and in accordance with EPA protocol will ensure that the concentrations (% effluent) of each dilution are real and allow for an accurate evaluation with the acute permit limit and acute monitoring requirements.

6. Dilution Water

Dilution water used for marine acute toxicity analyses should be of sufficient quality to meet minimum acceptability of test results (See I.B.7 and I.B.8). For both species, natural seawater shall be used as the dilution water. This water shall be collected from Narragansett Bay off the dock at the URI's Graduate School of Oceanography on South Ferry Road, Narragansett. It is noted that the University claims no responsibility for the personal safety on this dock. The permittee shall observe the rules posted at the dock. If this natural seawater diluent is found to be, or suspected to be toxic or unreliable, an alternate source of natural seawater or, deionized water mixed with hypersaline brine or artificial sea salts of nown quality with a salinity and pH similar to that of the receiving water may be substituted AFTER RECEIVING WRITTEN APPROVAL FROM RIDEM.

7. Effluent Toxicity Test Conditions for Mysids[1] (Mysidopsis bahia)

a.	Test Type	48-Hour Static Acute Definitive
b.	Salinity	25 ppt ± 10% for all dilutions
c.	Temperature (C)	$25^{o} \pm 1^{o}C$
d.	Light Quality	Ambient laboratory illumination
e.	Photoperiod	8 - 16 Hour Light/24-Hour
f.	Test Chamber Size	250 ml
g.	Test Solution Volume	200 ml
h.	Age of Test Organisms	1 - 5 Days
i.	No. Mysids Per Test Chamber	10
j.	No. of Replicate Test Chamber Per Concentration	2
k.	Total No. Mysids Per Test Concentration	20
l.	Feeding Regime	Light feeding (two (2) drops concentrated brine shrimp nauplii, approx. 100 nauplii per mysid twice daily).
m.	Aeration	None, unless dissolved oxygen concentration falls below 40% of saturation at which time gentle single-bubble aeration should be started.
n.	Dilution Water	Narragansett Bay water as discussed above.
o.	Dilutions	Five (5) dilutions plus a control: 100%, 50%, 25%, 12.5%, 6.25% and 0% effluent.
p.	Effect Measured and Test	Mortality - no movement of body test duration or appendages on gentle prodding, 48-hour LC_{50} and NOAEL.
q.	Test Acceptability	90% or greater survival of test organisms in control solution.

[1]Adapted from EPA/600/4-90/027

	r.	Sampling Requirements	Samples are collected and used within 24 hours after the last sample of the composite is collected.
	s.	Sample Volume Required	Minimum four (4) liters
8.	Effluent Toxicity Conditions for Silversides[1] (Menidia spp.)		
	a.	Test Type	48-Hour Static Acute Definitive
	b.	Salinity	25ppt $\pm$ 2ppt
	c.	Temperature	$25^{o} \pm 1^{o}C$
	d.	Light Quality	Ambient laboratory illumination
	e.	Photoperiod	8-14 hour light/24 hour
	f.	Test Chamber Size	250-1000 ml
	g.	Test Solution Volume	Minimum 200ml/replicate
	h.	Age of Test Organisms	Less than thirty (30) days
	i.	No. Fish Per Test Chamber	10 (Not to exceed loading limits).
	j.	No. of Replicate Test Chambers Per Concentration	2
	k.	Total No. of Fish Per Test Concentration	20
	l.	Feeding Regime	None
	m.	Aeration	None, unless DO concentration falls below 40% of saturation at which time gentle single bubble aeration should be started.
	n.	Dilution Water	Narragansett Bay water as discussed above.
	o.	Dilutions	Five (5) dilutions plus a control: 100%, 50%, 25%, 12.5%, 6.25% and 0% effluent.
	p.	Effect Measured and Test Duration	Mortality - no movement, 48-hour LC_{50} and NOAEL.
	q.	Test Acceptability	90% or greater survival of test organisms in control solution.

[1]Adapted from EPA/600/4-90/02

r.	Sampling Requirements	Samples are collected and used within 24 hours after the last sample of the composite is collected.
s.	Sample Volume Required	Minimum four (4) liters

9. Chemical Analysis

The following chemical analysis shall be performed for every two-specie sampling event.

Parameter	Effluent	Saline Diluent	Detection Limit (mg/l)
pH	X	X	---
Specific Conductance	X	X	---
Total Solids and Suspended Solids	X	X	---
Ammonia	X		0.1
Total Organic Carbon	X		0.5
Cyanide	X		0.01
Total Phenols	X		0.05
Salinity	X	X	PPT(0/00)

During the first, second, and fourth calendar quarter bioassay sampling events the following chemical analyses shall be performed:

Total Metals	Effluent	Saline Diluent	Detection Limit (µg/l)
Copper	X	X	1.0 ug/L
Cadmium	X	X	1.0 ug/L
Chromium	X	X	5.0 ug/L
Lead	X	X	3.0 ug/L
Zinc	X	X	20.0 ug/L
Nickel	X	X	10.0 ug/L
Aluminum	X	X	20.0 ug/L

The above analyses may be used to fulfill, in part or in whole, monitoring requirements in the permit for these specific metals.

During the third calendar quarter bioassay sampling event, the final effluent sample collected during the same twenty-four (24) hour period as the bioassay sample, shall be analyzed for priority pollutants (as listed in Tables II and III of Appendix D of 40 CFR 122). The bioassay priority pollutant scan shall be a full scan and may be coordinated with the other permit conditions to fulfill any priority pollutant scan requirements.

10. Toxicity Test Report Elements

A report of results will include the following:

- Description of sample collection procedures and site description.
- Names of individuals collecting and transporting samples, times, and dates of sample collection and analysis.
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests (quality assurance); light and temperature regime; dilution water description; other information on test conditions if different than procedures recommended.
- The method used to adjust the salinity of the effluent must be reported.
- All chemical and physical data generated (include detection limits).
- Raw data and bench sheets.
- Any other observations or test conditions affecting test outcome.

Toxicity test data shall include the following:

- Survival for each concentration and replication at time twenty-four (24) and forty-eight (48) hours.
- LC_{50} and 95% confidence limits shall be calculated using one of the following methods in order of preference: Probit, Trimmed Spearman Karber, Moving Average Angle, or the graphical method. All printouts (along with the name of the program, the date, and the author(s)) and graphical displays must be submitted. When data is analyzed by hand, worksheets should be submitted. The report shall also include the No Observed Acute Effect Level (NOAEL) which is defined as the highest concentration of the effluent (in % effluent) in which 90% or more of the test animals survive.
- The Probit, Trimmed Spearman Karber, and Moving Average Angle methods of analyses can only be used when mortality of some of the test organisms are observed in at least two (2) of the (percent effluent) concentrations tested (i.e., partial mortality). If a test results in a 100% survival and 100% mortality in adjacent treatments ("all or nothing" effect), an LC_{50} may be estimated using the graphical method.

11. Reporting of Bioassay Testing

Bioassay Testing shall be reported as follows:

Quarter Testing to be Performed	Report Due No Later Than	Results Submitted on DMR for
January 1 - March 31	April 15	March
April 1 - June 30	July 15	June
July 1 - September 30	October 15	September
October 1 - December 31	January 15	December

Bioassay testing following the protocol described herein shall commence during the _____ _____ quarter of 2013, and the first report shall be submitted to RIDEM no later than _____.

Bioassay reports shall be submitted to:

RIPDES Program
Office of Water Resources
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908-5767

C. INDUSTRIAL PRETREATMENT PROGRAM

1. Definitions

For the purpose of this permit, the following definitions apply.

a. 40 CFR 403 and sections thereof refer to the General Pretreatment regulations, 40 CFR Part 403 as revised.

b. Categorical Pretreatment Standards mean any regulation containing pollutant discharge limits promulgated by the USEPA in accordance with section 307(b) and (c) of the Clean Water Act(33 USC 1251), as amended, which apply to a specific category of industrial users and which appears in 40 CFR Chapter 1, subchapter N.

c. Pretreatment Standards include all specific prohibitions and prohibitive discharge limits established pursuant to 40 CFR 403.5, including but not limited to, local limits, and the Categorical Pretreatment Standards.

d. Regulated Pollutants shall include those pollutants contained in applicable categorical standards and any other pollutants listed in the Pretreatment Standards which have reasonable potential to be present in an industrial user's effluent.

2. Implementation

The authority and procedures of the Industrial Pretreatment Program shall at all times be fully and effectively exercised and implemented, in compliance with the requirements of this permit and in accordance with the legal authorities, policies, procedures and financial provisions described in the permittee's approved Pretreatment Program and Sewer Use

Ordinance, the Rhode Island Pretreatment Regulations and the General Pretreatment Regulations 40 CFR 403. The permittee shall maintain adequate resource levels to accomplish the objectives of the Pretreatment Program.

3. Local Limits

Pollutants introduced into POTWs by a non-domestic source (user) shall not: pass through the POTW, interfere with the operation or performance of the works, contaminate sludge as to adversely effect disposal options, or adversely effect worker safety and health.

a. The permittee has an approved Local Limits Monitoring Plan (LLMP) that shall continue to be implemented at all times.

b. At the time of renewal of this permit and in accordance with 40 CFR 122.*44(j)(2)*, the permittee shall submit to the DEM with its permit renewal application a written technical evaluation of the need to revise local limits. The evaluation shall be based, at a minimum, on information obtained during the implementation of the permittee's local limits monitoring plan and procedures required above by Part I.C.3.a of this permit and current RIPDES permit discharge limits, sludge disposal criteria, secondary treatment inhibition, and worker health and safety criteria.

4. Enforcement Response Plan (ERP)

The permittee has an approved ERP that meets the requirements of 40 CFR 403.8(f)(5). The permittee shall continue to implement its approved ERP at all times.

5. General

a. The permittee shall carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with Pretreatment Standards. At a minimum, all significant industrial users shall be inspected and monitored for all regulated pollutants at the frequency established in the approved Industrial Pretreatment Program but in no case less than once per year (one (1) year being determined as the reporting year established in Part I.C.7 of this permit). In addition, these inspections, monitoring and surveillance activities must be conducted in accordance with EPA's Industrial User Inspection and Sampling Manual for POTW's, April 1994. All inspections, monitoring, and surveillance activities shall be performed, and have records maintained, with sufficient care to produce evidence admissible in enforcement proceedings or judicial actions. The permittee shall evaluate, at least every two years unless specific 40 CFR 403 streamlining provisions have been adopted to the contrary, whether each SIU requires a Slug Control Plan. If a Slug Control Plan is required, it shall include the contents specified by 40 CFR 403.8(f)(2)(vi).

b. The permittee shall reissue all necessary Industrial User (IU) control mechanisms within thirty (30) days of their expiration date. The permittee shall issue, within sixty (60) days after the determination that an IU is a Significant Industrial User (SIU), all SIU control mechanisms. All SIU control mechanisms must contain, at a minimum, those conditions stated in 40 CFR 403.8(f)(1)(iii)(B). All control mechanisms must be mailed via Certified Mail, Return Receipt Requested. A complete bound copy of the control mechanism with the appropriate receipt must be kept as part of the Industrial User's permanent file. In addition, the permittee must develop a fact sheet describing the basis for the SIU's permit and retain this fact sheet as part of the SIU's permanent file.

c. The permittee must identify each instance of noncompliance with any pretreatment standard and/or requirement and take a formal documented action for each instance of noncompliance. Copies of all such documentation must be maintained in the Industrial User's permanent file.

d. The permittee shall prohibit Industrial Users from the dilution of a discharge as a substitute for adequate treatment in accordance with 40 CFR 403.6(d).

e. The permittee shall comply with the procedures of 40 CFR 403.18 for instituting any modifications of the permittee's approved Pretreatment Program. Significant changes in the operation of a POTW's Approved Pretreatment Program must be submitted and approved following the procedures outlined in 40 CFR 403.18(b) and 403.9(b). However, the endorsement of local officials responsible for supervising and/or funding the pretreatment program required by 403.9(b)(2) will not be required until DEM completes a preliminary review of the submission. The DEM will evaluate and review the permittee's initial proposal for a modification and provide written notification either granting preliminary approval of the proposed modifications or stating the deficiencies contained therein. DEM's written notification will also include a determination whether the submission constitutes a substantial or non-substantial program modification as defined by 40 CFR 403.18. Should DEM determine that a deficiency exists in the proposed modification, the permittee shall submit to DEM, within thirty (30) days of the receipt of said notice, a revised submission consistent with DEM's notice of deficiency.

Pretreatment program modifications which the permittee considers Non-substantial, shall be deemed to be approved within forty-five (45) days after submission of the request for modification, unless DEM determines that the modification is in fact a substantial modification or notifies the permittee of deficiencies. Upon receipt of notification that DEM has determined the modification is substantial, the permittee shall initiate the procedures and comply with the deadlines for substantial modifications, which are outlined below.

For substantial modifications, the permittee shall, within sixty (60) days (unless a longer time frame is granted) of the receipt of DEM's preliminary approval of the proposed modification, submit documentation (as required by 403.9(b)(2)) that any local public notification/participation procedures required by law have been completed, including any responses to public comments, and a statement that the local officials will endorse and/or approve the modification upon approval by DEM.

Within thirty (30) days of DEM's final approval of the proposed modification(s), the permittee shall implement the modification and submit proof that the local officials have endorse and/or approved the modification(s) to the DEM. Upon final approval by the DEM and adoption by the permittee, this modification(s) shall become part of the approved pretreatment program and shall be incorporated into this permit in accordance with 40CFR 122.63(g).

f. All sampling and analysis required of the permittee, or by the permittee of any Industrial User, must be performed in accordance with the techniques described in 40 CFR 136.

g. For those Industrial Users with discharges that are not subject to Categorical Pretreatment Standards, the permittee shall require appropriate reporting in accordance with 40 CFR 403.12(h).

h. The permittee shall, in accordance with 40 CFR 403.12(f), require all Industrial Users to immediately notify the permittee of all discharges by the Industrial User that could cause problems to the POTW, including slug loadings, as defined by 40 CFR 403.5.

i. The permittee shall require all Industrial Users to notify the permittee of substantial changes in discharge as specified in 40 CFR 403.12(j) and the permittee shall also notify DEM of each such substantial change in discharge prior to acceptance.

j. The permittee shall require New Sources to install and have in operation all pollution control equipment required to meet applicable Pretreatment Standards before beginning to discharge. In addition, the permittee shall require New Sources to meet all applicable Pretreatment Standards within the shortest feasible time which shall not exceed ninety (90) days in accordance with 40 CFR 403.6(b).

k. The permittee shall require all Industrial Users who are required to sample their effluent and report the results of analysis to the POTW to comply with signatory requirements contained in 40 CFR 403.12(l) when submitting such reports.

l. The permittee shall determine, based on the criteria set forth in 40 CFR 403.8(f)(2)(viii), using the EPA method of "rolling quarters", the compliance status of each Industrial User. Any Industrial User determined to meet Significant Non-Compliance (SNC) criteria shall be included in an annual public notification as specified in 40 CFR 403.8(f)(2)(viii).

m. The permittee shall require Industrial Users to comply with the notification and certification requirements of 40 CFR 403.12(p)(1), (3) and (4) pertaining to the discharge of substances to the POTW, which if disposed of otherwise, would be a hazardous waste under 40 CFR Part 261.

n. The permittee shall continue to designate, as SIUs, those Industrial Users (IUs) which meet the definition contained in 40 CFR 403.3 and the permittee's sewer use ordinance.

The permittee shall notify each newly designated SIU of its classification as an SIU within thirty (30) days of identification and shall inform the SIU of the requirements of an SIU contained in 40 CFR 403.12.

6. Categorical Industrial Users (CIUs)

a. The permittee shall require Industrial Users to comply with applicable Categorical Pretreatment Standards in addition to all applicable Pretreatment Standards and Requirements. The permittee shall require of all Categorical Industrial Users (CIUs), all reports on compliance with applicable Categorical Pretreatment Standards and Categorical Pretreatment Standard deadlines as specified in and in accordance with Sections (b), (d), (e) and (g) of 40 CFR 403.12. In addition, the permittee shall require Categorical Industrial Users to comply with the report signatory requirements contained in 40 CFR 403.12(1) when submitting such reports.

b. If the permittee applies the Combined Wastestream Formula (CWF) to develop fixed alternative discharge limits of Categorical Pretreatment Standards, the application of the CWF and the enforcement of the resulting limits must comply

with 40 CFR 403.6(e). The permittee must document all calculations within the control mechanism fact sheet and the resulting limits within the CIU's control mechanism. The permittee must ensure that the most stringent limit is applied to the CIU's effluent at end-of-pipe based upon a comparison of the resulting CWF limits and the permittee's local limits.

c. If the permittee has or obtains the authority to apply and enforce equivalent mass-per-day and/or concentration limitations of production-based Categorical Pretreatment Standards, then the permittee shall calculate and enforce the limits in accordance with 40 CFR 403.6(c). The permittee must document all calculations within the control mechanism fact sheet and the resulting limits within the CIU's control mechanism.

7. Annual Report

The annual report for the permittee's program shall contain information pertaining to the reporting year which shall extend from July 1st through June 30th and shall be submitted to the DEM by August 15th. Each item below must be addressed separately and any items which are not applicable must be so indicated. If any item is deemed not applicable a brief explanation must be provided. The annual report shall include the following information pertaining to the reporting year:

a. A listing of Industrial Users which complies with requirements stated in 40 CFR 403.12(i)(1). The list shall identify all Categorical Industrial Users, Significant Industrial Users and any other categories of users established by the permittee;

b. A summary, including dates, of any notifications received by the permittee of any substantial change in the volume or character of pollutants being introduced into the POTW by new or existing IUs. If applicable, an evaluation of the quality and quantity of influent introduced into the POTW and any anticipated impact due to the changed discharge on the quantity or quality of effluent to be discharged from the POTW shall be included;

c. A summary of the Compliance status of each Industrial User (IU), as of the end of last quarter covered by the annual report. The list shall identify all IUs in non-compliance, the pretreatment program requirement which the IU failed to meet, and the type, and date of the enforcement action initiated by the permittee in response to the violation. If applicable, the list shall also contain the date which IUs in non-compliance returned to compliance, a description of corrective actions ordered, and the penalties levied.

d. A list of industries which were determined, in accordance with Part I.C.5.(l) of this permit, to be in significant non-compliance required to be published in a local newspaper and a copy of an affidavit of publication, from the newspaper, averring that the names of these violators has been published;

e. A summary of inspection and monitoring activity performed by the permittee, including;

- significant industrial users inspected by the POTW (include inspection dates for each industrial user);
- significant industrial user sampled by the POTW (include sampling dates and dates of analysis for each industrial user);

f. A summary of permit issuance/reissuance activities including the name of the industrial user, expiration date of previous permit, issuance date of new permit, and a brief description of any changes to the permit;

g. A list including the report/notification type, due date, and receipt date for each report/notification required by 40 CFR 403.12.

h. A summary of public participation efforts including meetings and workshops held with the public and/or industry and notices/newsletters/bulletins published and/or distributed;

i. A program evaluation in terms of program effectiveness, local limits application and resources which addresses but is not limited to:
- A description of actions being taken to reduce the incidence of SNC by Industrial Users;
- effectiveness of enforcement response program;
- sufficiency of funding and staffing;
- sufficiency of the SUO, Rules and Regulations,and/or statutory authority;

j. An evaluation of recent/proposed program modifications, both substantial and non-substantial, in terms of the modification type, implementation and actual/ expected effect (note proposed modifications must be submitted under separate cover along with the information required by 40 CFR 403.18);

k. A detailed description of all interference and pass-through that occurred during the past year and, if applicable;

- A thorough description of all investigations into interference and pass-through during the past year;

- A description of the monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying pollutants analyzed and frequencies;

l. A summary of the average, maximum concentration, minimum concentration, and number of data points used for pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus the maximum allowable headworks loadings contained in the approved local limits evaluation and effluent sampling results versus water quality standards. Such a comparison shall be based on the analytical results required in Parts I.A and I.C. of this permit and any additional sampling data available to the permittee; and

m. A completed Annual Pretreatment Report Summary Sheet.

8. Inter-jurisdictional Agreement

The permittee has an approved Inter-jurisdictional Agreement with the Town of Barrington, which shall continue to be implemented at all times.

9. Sewer Use Ordinance

The permittee has an approved Sewer Use Ordinance which shall continue to be implemented at all times.

D. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

   The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Infiltration/Inflow

   The permittee shall minimize infiltration/inflow to the sewer system. A summary report of all actions taken to minimize infiltration/inflow during the previous six (6) months shall be submitted to RIDEM, Office of Water Resources, by the 15th day of January and July of each year. The first report is due _____, 20__.

E. SLUDGE

The permittee shall conform and adhere to all conditions, practices and regulations as contained in the State of Rhode Island Rules and Regulations for Sewage Sludge Management. The permittee shall comply with its RIDEM Order of Approval for the disposal of sludge.

F. DETECTION LIMITS

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below. All sludge testing required by this permit shall be in conformance with the method detection limits found in 40 CFR 503.8. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be submitted along with the monitoring report. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;
2. results reported as less than the MDL shall be included as zeros.

LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) represent the required Rhode Island MDLs.

Volatiles - EPA Method 624		MDL ug/l (ppb)
1V	acrolein	10.0
2V	acrylonitrile	5.0
3V	benzene	1.0
5V	bromoform	1.0
6V	carbon tetrachloride	1.0
7V	chlorobenzene	1.0
8V	chlorodibromomethane	1.0
9V	chloroethane	1.0
10V	2-chloroethylvinyl ether	5.0
11V	chloroform	1.0
12V	dichlorobromomethane	1.0
14V	1,1-dichloroethane	1.0
15V	1,2-dichloroethane	1.0
16V	1,1-dichloroethylene	1.0
17V	1,2-dichloropropane	1.0
18V	1,3-dichloropropylene	1.0
19V	ethylbenzene	1.0
20V	methyl bromide	1.0
21V	methyl chloride	1.0
22V	methylene chloride	1.0
23V	1,1,2,2-tetrachloroethane	1.0
24V	tetrachloroethylene	1.0
25V	toluene	1.0
26V	1,2-trans-dichloroethylene	1.0
27V	1,1,1-trichloroethane	1.0
28V	1,1,2-trichloroethane	1.0
29V	trichloroethylene	1.0
31V	vinyl chloride	1.0

Acid Compounds - EPA Method 625		MDL ug/l (ppb)
1A	2-chlorophenol	1.0
2A	2,4-dichlorophenol	1.0
3A	2,4-dimethylphenol	1.0
4A	4,6-dinitro-o-cresol	1.0
5A	2,4-dinitrophenol	2.0
6A	2-nitrophenol	1.0
7A	4-nitrophenol	1.0
8A	p-chloro-m-cresol	2.0
9A	pentachlorophenol	1.0
10A	phenol	1.0
11A	2,4,6-trichlorophenol	1.0

Pesticides - EPA Method 608		MDL ug/l (ppb)
1P	aldrin	0.059
2P	alpha-BHC	0.058
3P	beta-BHC	0.043
4P	gamma-BHC	0.048
5P	delta-BHC	0.034
6P	chlordane	0.211
7P	4,4'-DDT	0.251
8P	4,4'-DDE	0.049
9P	4,4'-DDD	0.139
10P	dieldrin	0.082
11P	alpha-endosulfan	0.031
12P	beta-endosulfan	0.036
13P	endosulfan sulfate	0.109
14P	endrin	0.050
15P	endrin aldehyde	0.062
16P	heptachlor	0.029
17P	heptachlor epoxide	0.040

Pesticides - EPA Method 608		MDL ug/l (ppb)
18P	PCB-1242	0.289
19P	PCB-1254	0.298
20P	PCB-1221	0.723
21P	PCB-1232	0.387
22P	PCB-1248	0.283
23P	PCB-1260	0.222
24P	PCB-1016	0.494
25P	toxaphene	1.670

Base/Neutral - EPA Method 625		MDL ug/l (ppb)
1B	acenaphthene *	1.0
2B	acenaphthylene *	1.0
3B	anthracene *	1.0
4B	benzidine	4.0
5B	benzo(a)anthracene *	2.0
6B	benzo(a)pyrene *	2.0
7B	3,4-benzofluoranthene *	1.0
8B	benzo(ghi)perylene *	2.0
9B	benzo(k)fluoranthene *	2.0
10B	bis(2-chloroethoxy)methane	2.0
11B	bis(2-chloroethyl)ether	1.0
12B	bis(2-chloroisopropyl)ether	1.0
13B	bis(2-ethylhexyl)phthalate	1.0
14B	4-bromophenyl phenyl ether	1.0
15B	butylbenzyl phthalate	1.0
16B	2-chloronaphthalene	1.0
17B	4-chlorophenyl phenyl ether	1.0
18B	chrysene *	1.0
19B	dibenzo (a,h)anthracene *	2.0
20B	1,2-dichlorobenzene	1.0
21B	1,3-dichlorobenzene	1.0
22B	1,4-dichlorobenzene	1.0
23B	3,3'-dichlorobenzidine	2.0
24B	diethyl phthalate	1.0
25B	dimethyl phthalate	1.0
26B	di-n-butyl phthalate	1.0
27B	2,4-dinitrotoluene	2.0
28B	2,6-dinitrotoluene	2.0
29B	di-n-octyl phthalate	1.0
30B	1,2-diphenylhydrazine (as azobenzene)	1.0
31B	fluoranthene *	1.0
32B	fluorene *	1.0
33B	hexachlorobenzene	1.0
34B	hexachlorobutadiene	1.0
35B	hexachlorocyclopentadiene	2.0
36B	hexachloroethane	1.0
37B	indeno(1,2,3-cd)pyrene *	2.0
38B	isophorone	1.0
39B	naphthalene *	1.0
40B	nitrobenzene	1.0
41B	N-nitrosodimethylamine	1.0
42B	N-nitrosodi-n-propylamine	1.0
43B	N-nitrosodiphenylamine	1.0
44B	phenanthrene *	1.0
45B	pyrene *	1.0
46B	1,2,4-trichlorobenzene	1.0

OTHER TOXIC POLLUTANTS

	MDL ug/l (ppb)
Antimony, Total	5.0
Arsenic, Total	5.0
Beryllium, Total	0.2
Cadmium, Total	1.0
Chromium, Total	5.0
Chromium, Hexavalent	20.0
Copper, Total	1.0
Lead, Total	3.0
Mercury, Total	0.5
Nickel, Total	10.0
Selenium, Total	5.0
Silver, Total	1.0
Zinc, Total	20.0
Asbestos	**
Cyanide, Total	10.0
Phenols, Total***	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL

NOTE:

The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

G. **MONITORING AND REPORTING**

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136).

2. Reporting

Monitoring results obtained during the previous month(s) shall be summarized and reported on Discharge Monitoring Report (DMR) Forms, postmarked no later than the 15th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to:

RIPDES Program
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

FACT SHEET

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO. **RI0100048**

NAME AND ADDRESS OF APPLICANT:

City of East Providence
145 Taunton Avenue
East Providence, Rhode Island 02914

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

East Providence Water Pollution Control Facility
1 Crest Avenue
East Providence, Rhode Island 02915

RECEIVING WATER: **Providence River**

CLASSIFICATION: **SB1{a}**

I. Proposed Action, Type of Facility, and Discharge Location

The above-named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is engaged in the treatment of domestic and industrial sewage. The discharge is from the East Providence Water Pollution Control Facility. DEM intends to enter into a consent agreement to give the City time to renegotiate their operational agreement as it relates to meeting Total Nitrogen limits.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on DMR data from April 2007 through March 2012 is shown on Attachment A-1. A facility diagram is shown in Attachment A-2.

III. Permit Basis and Explanation of Effluent Limitation Derivation

The City of East Providence owns and operates the Wastewater Treatment Facility located at 1 Crest Avenue in East Providence, Rhode Island. The discharge to Providence River consists of treated sanitary sewage contributed by the municipalities of East Providence and Barrington. The facility receives industrial wastewater flow from 6 of Significant Industrial Users (SIUs) which contribute an average daily wastewater flow of 0.5 MGD to the facility. Treatment consists of Coarse Screening, Comminution, Primary Settling, Aeration, Secondary Settling, Chlorination, and Dechlorination.

The requirements set forth in this permit are from the State's Water Quality Regulations and the State's Regulations for the Rhode Island Pollutant Discharge Elimination System, both filed pursuant to RIGL Chapter 46-12, as amended. RIDEM's primary authority over the permit comes from EPA's delegation of the program in September 1984 under the Federal Clean Water Act (CWA).

Development of RIPDES permit limitations is a multi-step process consisting of: determining if Federal effluent guidelines apply; calculation of allowable water quality-based discharge levels based on background data and available dilution; assigning appropriate Best Professional Judgment-based limits; comparing existing and proposed limits; comparing discharge data to proposed limits; and developing interim limits as appropriate. A brief description of these steps is presented below. For a more detailed presentation, the "East Providence Wastewater Treatment Facility Permit Development Document" is available upon request.

The “Percent Removal” biochemical oxygen demand (BOD_5) and total suspended solids (TSS) limits and pH limitations are based upon the secondary treatment requirements in Section 301(b)(1)(B) of the Clean Water Act (CWA), as defined in 40 CFR 133. The November-April BOD_5 and TSS limits are based on the quantity (i.e. lb/day) limits from the previous permit such that the mass load is held constant. This results in concentration-based limits that have been decreased proportional to the increase in design flow. The previous permit’s “Average Monthly” and “Average Weekly” limits were based on the secondary treatment requirements and the “Maximum Daily” limits were based on Rhode Island requirements for Publicly Owned Treatment Works (POTWs) under Rule 17.04(b) of the RIPDES Regulations and as provided in 40 CFR 123.25. The May-October “Average Monthly”, “Average Weekly”, and “Daily Maximum” carbonaceous biochemical oxygen demand ($CBOD_5$) and total suspended solids (TSS) limits are set at levels more stringent than those called out in 40 CFR 133.102 (a)-(c) due to increased pollutant removals that will be achieved from the operation of nutrient removal equipment.

RIDEM and EPA agree that the Total Suspended Solids are an appropriate measure of the solids content being discharged to the receiving waters. Therefore, settleable solids are a “process-control parameter” that can aid in the assessment of the operation of the plant but need not be an effluent limit.

Oil and Grease monitoring requirements have been maintained in this permit in order to serve as a process control parameter. Monitoring data will serve as a monitor of potential excessive levels of Oil and Grease in the collection system that may cause backups and blockages.

The Rhode Island Water Quality Regulations include Enterococci criteria for primary contact/swimming of a geometric mean of 35 colonies/100 ml and a single sample maximum of 104 colonies/100 ml. The “single sample maximum” value is only used to evaluate beach swimming advisories, which does not apply to the receiving water in the area of the outfall. EPA’s November 12, 2008 memorandum regarding “Initial Zones of Dilution for Bacteria in Rivers and Streams Designated for Primary Contact Recreation” clarifies that it is not appropriate to use dilution for bacteria criteria in receiving waters that are designated for primary contact recreation. Therefore, because the receiving water is designated for primary contact recreation, the DEM has assigned a monthly average Enterococci limit of 35 colonies/100 ml. The daily maximum enterococci limit has been set at the 90% upper confidence level value for “lightly used full body contact recreation” of 276 colonies/100 ml. The DEM has also assigned Fecal Coliform monitoring to ensure that the discharge from the WWTF will not have an impact on any areas designated for shellfish harvesting outside of the immediate vicinity of the outfall.

It has been determined that mixing zones and corresponding dilution factors are acceptable for the effluent from the East Providence Wastewater Treatment Facility. As indicated in the previous permit’s Fact Sheet, a chronic dilution factor of 40 and an acute dilution factor of 20 were established. The acute mixing zone is defined as the portion of the Providence River located within a radius of 120 meters centered around a point 50 meters due south of the outfall. The chronic mixing zone is defined as that portion of the Providence River south of a line, from can buoy “39” to the intersection with the shoreline due east, and northeast of a line, from can buoy “39” to the intersection of a point on the shoreline located 700 meters due south of the line

previously described. The wastewater treatment facilities effluent is discharged through a 30" pipe which is approximately 1000 feet offshore. Additional information regarding the East Providence mixing zones can be found in the September 1991 Fact Sheet, which is on file at the DEM.

Based on the above dilution factors and the saltwater aquatic life and non-class A human health criteria, from the Rhode Island Water Quality Regulations, allowable discharge concentrations were established using 80% allocation when no background data was available and 90% allocation when background data was available. 100% allocation of total residual chlorine (TRC) was used due to the fact that Chlorine is not expected to be found in ambient water and it is a non-conservative pollutant. Background data, for Cadium, Chromium, Copper, Lead, Nickel, and Silver, was obtained from the four SINBADD cruises in Current Report #: NBP-89-22.

Based upon a Facilities Plan Update (FPU) dated July 2010, the City recalculated its flows based upon Barrington's revised future flow. In DEM's FPU approval letter from December 2010, DEM stated that it would allow a design flow increase from 10.4 MGD to 14.2 MGD. In order to comply with the Antibacksliding and Antidegradation requirements, the DEM decreased the concentration-based limits proportional to the flow increase, such that the mass load is held constant. Therefore, potential effluent concentration limits were decreased by a factor of 10.4/14.2=0.732 to maintain constant potential effluent load limits, and reasonable potential for each parameter was assessed at the new, lower effluent concentration limits.

In accordance with 40 CFR Part 122.4(d)(1)(iii), water quality based effluent limitations are only required for those pollutants in the discharge that have the reasonable potential to cause or contribute to the exceedance of the instream criteria. In order to evaluate the need for permit limitations, allowable monthly average (chronic) discharge concentrations were compared to the monthly average Discharge Monitoring Report (DMR) data and the mean of the concentration reported from the State User fee Program (UFP) data. Additionally, the allowable daily maximum (acute) discharge concentrations were compared to the daily maximum DMR data and the maximum of the concentrations reported from the UFP data.

Based on the analysis presented above, water quality based limitations for Outfall 001A are appropriate for total residual chlorine and cyanide. In addition, monitoring for Total Copper, Total Cadmium, Total Chromium, Total Lead, Total Zinc, Total Nickel, and Total Aluminum has been added to the permit as part of the quarterly toxicity testing requirements.

Based upon the previously mentioned FPU, DEM revised the Total Nitrogen limit to 5.9 mg/L to compensate for the design flow limit increase to 14.2 MGD, thereby keeping permitted Nitrogen load constant in pounds per day. Therefore, the new permit increases the monthly average permit flow limit from 10.4 MGD to 14.2 MGD and reduces the seasonal Total Nitrogen limit from 8.0 mg/L to 5.9 mg/L, and maintains the seasonal Total Nitrogen load limit of 694 lbs/day. This permit also maintains the provision that the permittee operate the treatment facility to reduce the discharge of total nitrogen, during the months of November through April, to the maximum extent possible using all available treatment equipment in place at the facility. Assigning seasonal total nitrogen limits and requiring that the WWTF be operated year round in a manner to reduce the discharge of nitrogen to the maximum extent possible will result in substantial progress towards the mitigation of hypoxic/anoxic events and meeting water quality standards. In addition, average monthly sampling for offseason Total Nitrogen and average monthly and maximum daily sampling for other Nitrogen parameters such as Nitrate, Nitrite, and TKN have been maintained to facilitate the continued characterization of all forms of Nitrogen from the facility's discharge. Additional information regarding the basis for Nitrogen limitations and monitoring for Nitrogen may be found in the "East Providence Wastewater Treatment Facility Permit Development Document".

The biomonitoring requirements are set forth in 40 CFR 131.11 and in the State's Water Quality Regulations. RIDEM's toxicity permitting policy is based on past toxicity data and the level of available dilution. Dilutions greater than 20:1 require that acute toxicity be evaluated. The permit requires that two acute toxicity tests be conducted on the final effluent once per quarter. The permit contains acute LC50 > 100% effluent limits which shall assure control of toxicity in the effluent. If toxicity is consistently demonstrated, then toxicity identification and reduction will be required.

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41 (j), 122.44 (i), and 122.48 to yield data representative of the discharge.

The permit contains requirements for the permittee to comply with the State's Sludge Regulations for sludge disposal in accordance with the requirements of Section 405(d) of the Clean Water Act (CWA). Permits must contain sludge conditions requiring compliance with limits, state laws, and applicable regulations as per Section 405(d) of the CWA and 40 CFR 503. The RIDEM Sludge Order of Approval sets forth the conditions to ensure this compliance.

The permit contains a reporting requirement for a local program to regulate industrial discharges to the sewer system (referred to as pretreatment program). This program is being required under authority of Section 402(b)(8) of the CWA and 40 CFR 122.44 (j) and 403.8 because the city receives significant discharges of industrial wastewater.

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all permits.

IV. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. A public hearing will be held after a thirty (30) day public notice. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

Following the close of the comment period, and after the public hearing, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments, provided oral testimony, or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

V. DEM Contact

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Samuel Kaplan, P.E.
Department of Environmental Management
Office of Water Resources
235 Promenade Street
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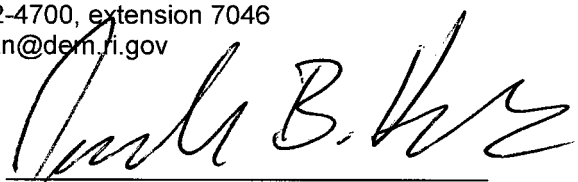
7/5/13
Date



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Principal Sanitary Engineer
RIPDES Program
Office of Water Resources
Department of Environmental Management

ATTACHMENT A-1

DESCRIPTION OF DISCHARGE: Secondary treated domestic and industrial wastewater.
DISCHARGE: 001A - Secondary Treatment Discharge

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE:

PARAMETER	MONTHLY AVERAGE[1]	WEEKLY AVERAGE[2]	DAILY MAXIMUM[3]
FLOW	7.0266 MGD		9.61 MGD
BOD_5	14.4 mg/l	21.8mg/l	40.6 mg/l
BOD_5	888.0 lb/day		3517.5 lb/day
BOD_5 % removal	92.9%		
TSS	15.8 mg/l	24.30 mg/l	45.10 mg/l
TSS	913.1 lb/day		3972.9 lb/day
TSS% removal	92.6%		
Settleable Solids		0.19 ml/l	0.20 ml/l
Total Nitrogen	10.84 mg/L		14.31 mg/L
Total Nitrogen	599.9 lb/day		
Ammonia	4.08 mg/l		5.57 mg/l
Nitrite	0.24 mg/l		0.40 mg/l
Nitrate	4.74 mg/l		6.01 mg/l
TKN	5.94 mg/l		8.67 mg/l
Phosphorus			1.50 mg/l
Oil and Grease			4.62 mg/l
Fecal Coliform	24.47 MPN/100 ml	42.1 MPN/100 ml	290.2 MPN/100 ml
pH	6.63 S.U. (Minimum)		7.16 S.U. (Maximum)
Chlorine Residual	74.8 mg/l		175.2 mg/l
Copper	9 ug/l		9 ug/l
Cyanide	8.8 ug/l		9.2 ug/l
Heptachlor	<0.05 ug/l[4]		<0.05 ug/l[4]

[1]Data represents the mean of the monthly average data from April 2007 - March 2012 unless otherwise indicated
[2]Data represents the mean of the average weekly data from April 2007 - March 2012 unless otherwise indicated
[3]Data represents the mean of the daily maximum data from April 2007 - March 2012 unless otherwise indicated
[4]Data represents the mean of the monthly average data from October 2007 - December 2010

ATTACHMENT A-1, Cont.

Biotoxicity Data LC_{50} Values (in percent effluent)

	2010 1nd qtr. >100	**2rd qtr.** >100	**3th qtr.** >100	**4st qtr.** >100	**2011 1nd qtr.** >100	**2rd qtr.** >100	**3th qtr.** >100	**4st qtr.** >100	**20121st qtr..** >100
Pre-Cl_2 Mysidopsis bahia									
Pre-Cl_2 Menidia spp.	>100	>100	>100	>100	>100	>100	>100	>100	>100

ATTACHMENT A-2: FACILITY DIAGRAM

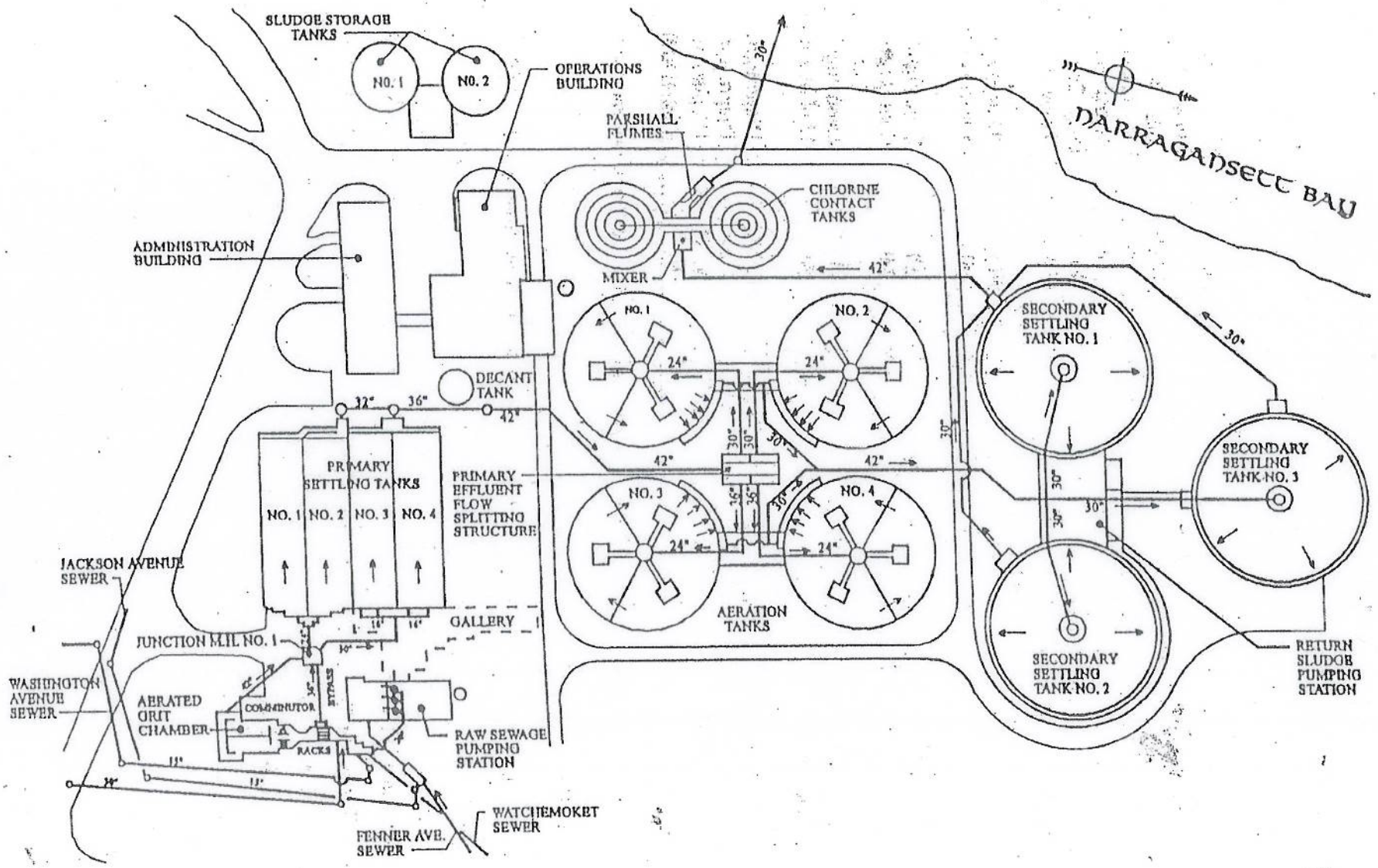

FIGURE 1-1. WASTEWATER FLOW SCHEMATIC

Attachment A-2: facility diagram