RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

May 12, 2010

CERTIFIED MAIL

Mr. Nicholas Griseto, President and CEO
Bradford Printing & Finishing, LLC.
P.O. Box 275
Bradford, RI 02808

RE: Bradford Printing & Finishing, LLC.
RIPDES Permit No. RI0000043

Dear Mr. Griseto,

Enclosed is your final Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit issued pursuant to the referenced application. State regulations, promulgated under Chapter 46-12 of the Rhode Island General Laws of 1956, as amended, require this permit to become effective on the date specified in the permit.

Also enclosed is information relative to hearing requests and stays of RIPDES Permits.

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning this permit, feel free to contact Brian Lafaille, P.E. of the State Permits Staff at (401) 222-4700, extension 7731.

Sincerely,

Eric A. Beck, P.E.
Supervising Sanitary Engineer

EAB:bl

Enclosures

cc: David Gibbons, Bradford Printing & Finishing, LLC. (Electronic Copy via email)
Annie McFarland, RIDEM-OWR (Electronic Copy via email)
Deb Merrill, RIDEM-OWR (Electronic Copy via email)
Traci Pena, RIDEM-OWR (Electronic Copy via email)

RESPONSE TO COMMENTS

NO SIGNIFICANT COMMENTS WERE RECEIVED ON THE DRAFT PERMIT FOR THIS FACILITY; THEREFORE, NO RESPONSE WAS PREPARED.

HEARING REQUESTS

If you wish to contest any of the provisions of this permit, you may request a formal hearing within thirty (30) days of receipt of this letter. The request should be submitted to the Administrative Adjudication Division at the following address:

Bonnie Stewart, Clerk
Department of Environmental Management
Office of Administrative Adjudication
235 Promenade Street, 3rd Floor
Providence, Rhode Island 02908

Any request for a formal hearing must conform to the requirements of Rule 49 of the State Regulations.

STAYS OF RIPDES PERMITS

Should the Department receive and grant a request for a formal hearing, the contested conditions of the permit will not automatically be stayed. However, the permittee, in accordance with Rule 50, may request a temporary stay for the duration of adjudicatory hearing proceedings. Requests for stays of permit conditions should be submitted to the Office of Water Resources at the following address:

Angelo S. Liberti, P.E.
Chief of surface Water Protection
Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908

All uncontested conditions of the permit will be effective and enforceable in accordance with the provisions of Rule 49.

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,

Bradford Printing & Finishing, LLC
P.O. Box 275
Bradford, RI 02808

is authorized to discharge from a facility located at

460 Bradford Road
Bradford, Rhode Island

to receiving waters named

Pawcatuck River

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

This permit shall become effective on July 1, 2010.

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

This permit supersedes the permit issued on November 30, 2001.

This permit consists of 26 pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this 11th day of May, 2010.

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

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(s) 002 (Final Effluent).[1]

   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
Production Rate	40,000					Monthly	Inventory Control
BOD_5	132	264	--- mg/l		--- mg/l	2/Week	24-Hr. Comp.
COD	2,068	3,200	--- mg/l		--- mg/l	2/Week	24-Hr. Comp.
TSS	340	440	--- mg/l		--- mg/l	2/Week	24-Hr. Comp.
Sulfide	4.0	8.0	--- mg/l		--- mg/l	2/Month	Grab
Surfactants	2.88	2.88	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Chromium (Total)	0.48	0.48	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Phenol (Total)	0.32	0.32	--- mg/l		--- mg/l	2/Month	Grab

[1]The limits expressed on this page shall be invoked when the permittee's total average monthly production is less than or equal to 40,000 pounds of cloth per discharge day. Discharge days are defined as days with a wastewater discharge associated with production that is regulated under 40 CFR Part 410. Discharges that are caused exclusively by rain events or are the result of a minimum discharge from the treatment facility during periods of shutdown during which there is no production are not considered discharge days and should not be used when calculating the production rate. Supporting records for the calculation of production per discharge day shall be maintained on-site for a period of at least five (5) years. See also Section I.A.17.

---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 Tuesday through Friday, as appropriate, at the following location: Outfall 002 (Final Effluent).

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(s) 002 (Final Effluent).[1]

   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
Production Rate	60,000					Monthly	Inventory Control
BOD_5	198	396	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
COD	3,102	4,800	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
TSS	510	660	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
Sulfide	6.0	12.0	--- mg/l		--- mg/l	2/Month	Grab
Surfactants	4.32	4.32	--- mg/l		--- mg/l	2/Month	24-Hr.Comp.
Chromium (Total)	0.72	0.72	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Phenol (Total)	0.48	0.48	--- mg/l		--- mg/l	2/Month	Grab

[1]The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 40,000 pounds of cloth per discharge day and less than or equal to 60,000 pounds of cloth per discharge day. Discharge days are defined as days with a wastewater discharge associated with production that is regulated under 40 CFR Part 410. Discharges that are caused exclusively by rain events or are the result of a minimum discharge from the treatment facility during periods of shutdown during which there is no production are not considered discharge days and should not be used when calculating the production rate. Supporting records for the calculation of production per discharge day shall be maintained on-site for a period of at least five (5) years. See also Section I.A.17.

---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 Tuesday through Friday, as appropriate, at the following location: Outfall 002 (Final Effluent).

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(s) 002 (Final Effluent).[1]

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

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs. per day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Production Rate	80,000					Monthly	Inventory Control
BOD_5	264	528	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
COD	4,136	6,400	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
TSS	680	880	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
Sulfide	8.0	16.0	--- mg/l		--- mg/l	2/Month	Grab
Surfactants	5.76	5.76	--- mg/l		--- mg/l	2/Month	24-Hr.Comp.
Chromium (Total)	0.96	0.96	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Phenol (Total)	0.64	0.64	--- mg/l		--- mg/l	2/Month	Grab

[1]The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 60,000 pounds of cloth per discharge day and less than or equal to 80,000 pounds of cloth per discharge day. Discharge days are defined as days with a wastewater discharge associated with production that is regulated under 40 CFR Part 410. Discharges that are caused exclusively by rain events or are the result of a minimum discharge from the treatment facility during periods of shutdown during which there is no production are not considered discharge days and should not be used when calculating the production rate. Supporting records for the calculation of production per discharge day shall be maintained on-site for a period of at least five (5) years. See also Section I.A.17.

---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 Tuesday through Friday, as appropriate, at the following location: Outfall 002 (Final Effluent).

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(s) 002 (Final Effluent).[1]

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

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs. per day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Production Rate	100,000					Monthly	Inventory Control
BOD_5	330	660	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
COD	5,170	8,000	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
TSS	850	1,100	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
Sulfide	10.0	20.0	--- mg/l		--- mg/l	2/Month	Grab
Surfactants	7.20	7.20	--- mg/l		--- mg/l	2/Month	24-Hr.Comp.
Chromium (Total)	1.20	1.20	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Phenol (Total)	0.80	0.80	--- mg/l		--- mg/l	2/Month	Grab

[1]The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 80,000 pounds of cloth per discharge day and less than or equal to 100,000 pounds of cloth per discharge day. Discharge days are defined as days with a wastewater discharge associated with production that is regulated under 40 CFR Part 410. Discharges that are caused exclusively by rain events or are the result of a minimum discharge from the treatment facility during periods of shutdown during which there is no production are not considered discharge days and should not be used when calculating the production rate. Supporting records for the calculation of production per discharge day shall be maintained on-site for a period of at least five (5) years. See also Section I.A.17.

---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 Tuesday through Friday, as appropriate, at the following location: Outfall 002 (Final Effluent).

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(s) 002 (Final Effluent).[1]

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

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs. per day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Production Rate	120,000					Monthly	Inventory Control
BOD_5	396	792	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
COD	6,204	9,600	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
TSS	1,020	1,320	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
Sulfide	12.0	24.0	--- mg/l		--- mg/l	2/Month	Grab
Surfactants	8.64	8.64	--- mg/l		--- mg/l	2/Month	24-Hr.Comp.
Chromium (Total)	1.44	1.44	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Phenol (Total)	0.96	0.96	--- mg/l		--- mg/l	2/Month	Grab

[1]The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 100,000 pounds of cloth per discharge day and less than or equal to 120,000 pounds of cloth per discharge day. Discharge days are defined as days with a wastewater discharge associated with production that is regulated under 40 CFR Part 410. Discharges that are caused exclusively by rain events or are the result of a minimum discharge from the treatment facility during periods of shutdown during which there is no production are not considered discharge days and should not be used when calculating the production rate. Supporting records for the calculation of production per discharge day shall be maintained on-site for a period of at least five (5) years. See also Section I.A.17.

---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 Tuesday through Friday, as appropriate, at the following location: Outfall 002 (Final Effluent).

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

6. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 002 (Final Effluent).[1]

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

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs. per day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Production Rate	---					Monthly	Inventory Control
BOD_5	462	924	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
COD	7,238	11,200	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
TSS	1,190	1,540	--- mg/l		--- mg/l	2/Week	24-Hr.Comp.
Sulfide	14.0	28.0	--- mg/l		--- mg/l	2/Month	Grab
Surfactants	10.08	10.08	--- mg/l		--- mg/l	2/Month	24-Hr.Comp.
Chromium (Total)	1.68	1.68	--- mg/l		--- mg/l	2/Month	24-Hr. Comp.
Phenol (Total)	1.12	1.12	--- mg/l		--- mg/l	2/Month	Grab

[1]The limits expressed on this page shall be invoked when the permittee's total average monthly production is greater than 120,000 pounds of cloth per discharge day. Discharge days are defined as days with a wastewater discharge associated with production that is regulated under 40 CFR Part 410. Discharges that are caused exclusively by rain events or are the result of a minimum discharge from the treatment facility during periods of shutdown during which there is no production are not considered discharge days and should not be used when calculating the production rate. Supporting records for the calculation of production per discharge day shall be maintained on-site for a period of at least five (5) years. See also Section I.A.17.

---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 Tuesday through Friday, as appropriate, at the following location: Outfall 002 (Final Effluent)

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

7. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 002 (Final Effluent). 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	1.0 MGD	3.6 MGD				Continuous	Recorder
Fecal Coliform			200 MPN[1] 100 ml	400 MPN[1] 100 ml	400 MPN[1] 100 ml	1/Week	Grab
pH			(6.5 SU)		(9.0 SU)	2/Day	Grab
Phosphorus, Total (April – Sept)					--- mg/l	1/Month	24-Hr. Comp.
(Oct – March)					--- mg/l	1/Quarter	24-Hr. Comp.
Nitrate, Total (as N) (April – Sept)					--- mg/l	1/Month	24-Hr. Comp.
(Oct – March)					--- mg/l	1/Quarter	24-Hr. Comp.
Nitrite, Total (as N) (April – Sept)					--- mg/l	1/Month	24-Hr. Comp.
(Oct – March)					--- mg/l	1/Quarter	24-Hr. Comp.
Ammonia, Total (as N) (May – Oct)			56.5 mg/l		361.8 mg/l	1/Month	24-Hr. Comp.
(Nov – April)			196.5 mg/l		618 mg/l	1/Month	24-Hr. Comp.
TKN (as N) (April – Sept)					--- mg/l	1/Month	24-Hr. Comp.
(Oct – March)					--- mg/l	1/Quarter	24-Hr. Comp.
Nitrogen, Total (Total Nitrate + Total Nitrite + TKN) (April – Sept.)					--- mg/l	1/Month	Calculated
(Oct. – Mar.)					--- mg/l	1/Quarter	Calculated

[1]The Fecal Coliform samples are to be taken Tuesday - Friday. The Geometric Mean shall be used to obtain the "weekly average" and the "monthly average."

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

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

Sampling for pH shall be performed Monday - Friday.

Samples taken in compliance with the monitoring requirements specified above shall be taken Tuesday – Friday (Monday – Friday for pH and Sunday – Saturday for flow) at the following location: Outfall 002

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

8. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 002 (Final Effluent).

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

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs. per day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Copper, Total			67.8 ug/l		95.4 ug/l	2/Month	24-Hr. Comp.
Lead, Total			9.6 ug/l		404.1 ug/l	2/Month	24-Hr. Comp.
Nickel, Total			427.3 ug/l		3843.1 ug/l	1/Quarter	24-Hr. Comp.
Aluminum, Total			2366.8 ug/l		20403.1 ug/l	1/Quarter	24-Hr. Comp.
Zinc, Total			368 ug/l		979.6 ug/l	1/Quarter	24-Hr. Comp.
Cadmium, Total			2.1 ug/l		13.7 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.

Samples taken in compliance with the monitoring requirements specified above shall be taken Tuesday through Friday at the following locations: Outfall 002.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

9. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 002 (Final Effluent).

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

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs. per day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Ceriodaphnia Sp.							
LC50[1]					100% or Greater[2]	1/Quarter	Composite
C-NOEC[3]					--- %	1/Quarter	Composite
Pimephales Promelas							
LC50[1]					100% or Greater[2]	1/Quarter	Composite
C-NOEC[3]					---%	1/Quarter	Composite

[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.

[3]C-NOEC is defined as the highest concentration of toxicant or effluent at which no adverse effects are observed.

---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 at the following locations: Outfall 002 in accordance with I.B of the permit.

10. The pH of the effluent shall not be less than 6.5 standard units 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.

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

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

13. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        (1) One hundred micrograms per liter (100 ug/l);

        (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;

        (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

        (4) Any other notification level established by the Director in accordance with 40 CFR 122.44(f) and Rhode Island Regulations.

    b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        (1) Five hundred micrograms per liter (500 ug/l);

        (2) One milligram per liter (1 mg/l) for antimony;

        (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFRs 122.21(g)(7); or

        (4) Any other notification level established by the Director in accordance with 40 CFR 122.44(f) and Rhode Island Regulations.

    c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.

14. The permittee shall analyze its effluent annually for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Tables II and III. The results of these analyses shall be submitted to the Department of Environmental Management by January 15th of each year for the previous calendar year. The State user fee samples may be utilized provided that the sampling is coordinated in advance. 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.

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

16. The permittee shall record the production of the facility as regulated under 40 CFR Part 410.42/410.43 (b), (c), and (d) monthly through inventory control calculations. The data shall be summarized and reported to the RIPDES program annually on January 15th for the previous calendar year.

B. BIOMONITORING REQUIREMENTS AND INTERPRETATION OF RESULTS

1. General

Beginning on the effective date of the permit, the permittee shall perform eight (8) chronic toxicity tests per year on samples collected from discharge outfall 002. 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. Chronic and acute toxicity data shall be reported as outlined in Section I.B.9 The chronic fish and daphnid tests shall be used to calculate the acute LC_{50} at the forty-eight (48) hour exposure interval. 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

For four sampling events, (one each calendar quarter) the permittee will conduct seven day chronic toxicity tests on the two species listed below, for a total of eight (8) chronic toxicity tests per year. This requirement entails performing two-species testing as follows:

Species	Test Type	Frequency
	Two Species Test (Four Times Annually)	
Daphnid (Ceriodaphnia sp.)	Reproduction/Survival Acute Static (LC_{50})	Quarterly
Fathead Minnow (Pimephales promelas)	Growth/Survival	Quarterly

A sampling event is defined as three 24-hour composites collected over the seven-day test period (see Section I.B.4).

3. Testing Methods

Chronic toxicity tests shall be conducted in accordance with protocols listed in the latest edition of Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA-600/4-89/011), incorporating any deviations from protocol listed herein, or additional methods if 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 period (no rain 48 hours prior to or during sampling unless approved by RIDEM). For each sampling event, the effluent samples shall be collected on days 0, 3 and 5 of the 7-day exposure period. The first sample is used for test initiation, Day 1, and for test solution renewal on Day 2. The second sample would be used for test solution renewal on Days 3 and 4. The third sample would be used for test solution renewal on Days 5, 6 and 7.

To eliminate the problem of potential rainfall interference during the five-day sampling period for the chronic tests, the permittee shall collect enough sample on Day 0 to properly store and use one-third on both Days 3 and 5 if rain has occurred since Day 0. In addition, if no rainfall has occurred since Day 3, enough samples shall also be collected on Day 3 to use for Day 5 if necessary.

In the laboratory, the initial sample (Day 0) will be split into two subsamples, after thorough mixing, for the following:

Chemical Analysis
Chronic Toxicity Testing

Day 3 and 5 samples will be held until test completion. If either the Day 3 or 5 renewal sample is of sufficient potency to cause lethality to 50% or more test organisms in any of the dilutions for either species, then a chemical analysis shall be performed on the appropriate sample(s) as well.

All samples held overnight shall be refrigerated at 4°C.

5. Dilution Water

Dilution water used for freshwater chronic toxicity analyses should be of sufficient quality to meet minimum acceptability of test results (see Sections I.B.6 and I.B.7). For both species, natural freshwater shall be used as the dilution water. This water shall be collected from the Wood River at the Skunk Hill Road Bridge. If this natural freshwater diluent is found to be, or suspected to be toxic or unreliable, an alternate or laboratory source of water of known quality with a hardness and pH similar to that of the receiving water may be substituted AFTER RECEIVING WRITTEN APPROVAL FROM RIDEM.

6. Effluent Toxicity Test Conditions for the Daphnid (Ceriodaphnia sp.) Survival and Reproduction Test[1]

a.	Test Type	Static Renewal
b.	Temperature (C)	$25^{\circ} \pm 1^{\circ}$ C
c.	Light Quality	Ambient laboratory illumination
d.	Photoperiod	16 hours light, 8 hours dark
e.	Test Chamber Size	30 ml
f.	Test Solution Volume	15 ml
g.	Renewal of Test Solutions	Daily, using most recently collected sample.
h.	Age of Test Organisms	Less than twenty-four (24) hours and all released within an eight (8) hour period of each other.
i.	Number of Neonates Per Test Chamber	1
j.	Number of Replicate Test Chambers per Treatment	10
k.	Number of Neonates Per Test Concentration	10
l.	Feeding Regime	Feed 0.1 ml each of YTC and algal suspension per exposure chamber daily.
m.	Aeration	None
n.	Dilution Water	Wood River, see Section I.B.5.
o.	Effluent Concentrations	Five (5) dilutions plus a control: 100%, 50%, 25%, 12.5%, 6.25% and 0% effluent.
p.	Test Duration	Until 60% of control females have three (3) broods (may require seven (7) days).
q.	End Points	Survival and reproduction.
r.	Test Acceptability	80% or greater survival and an average of fifteen (15) or more young per female in the control solutions. At least 60% of surviving females in controls should have produced third brood.

s.	Sampling Requirements	For off-site tests, a minimum of three (3) samples are collected (i.e., Days 0, 3 & 5) and used for renewal (see Section I.B.4). Off-site samples must be first used within forty-eight (48) hours of collection.
t.	Sample Volume Required	Minimum 2 liters/day

[1]Adapted from EPA/600/4-89/001

7. Test Conditions for the Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test[1]

a.	Test Type	Static Renewal
b.	Temperature	$25^{\circ} \pm 1^{\circ}$ C
c.	Light Quality	Ambient laboratory illumination
d.	Photoperiod	16 hours light, 8 hours dark
e.	Test Chamber Size	250-1000 ml
f.	Test Solution Volume	Minimum 200 ml/replicate
g.	Renewal of Test Concentrations	Daily, using most recently collected sample.
h.	Age of Test Organisms	Newly hatched larvae less than twenty-four (24) hours old.
i.	Number of Larvae/Test Chamber and Control	15 (Minimum of 10)
j.	Number of Replicate Chambers Per Concentration	4 (Minimum of 3)
k.	Number of Larvae/Concentration	60 (Minimum of 30)
l.	Feeding Regime	Feed 0.1 ml newly hatched brine shrimp nauplii twice daily, six (6) hours between feedings (at the beginning of the work day prior to renewal and at the end of the work day following renewal). Sufficient larvae are added to provide an excess.
m.	Cleaning	Siphon daily, immediately before test solution renewal.

n. Aeration	None, unless DO concentration falls below 40% of saturation. Rate should be less than 100 bubbles/minute.
o. Dilution Water	Wood River water as discussed above.
p. Effluent Concentrations	Five (5) effluent concentrations and a control: 100%, 50%, 25%, 12.5%, 6.25% and 0% effluent.
q. Test Duration	Seven (7) Days
r. End Points	Survival and growth (weight).
s. Test Acceptability	80% or greater survival in controls: average dry weight of controls equals or exceeds 0.25 mg.
t. Sampling Requirements	For off-site tests, a minimum of three (3) samples are collected (i.e., Days 0, 3 & 5) and used for renewal (see Section I.B.4)
u. Sample Volume Required	Minimum 2.5 liters/day.

[1]Adapted from EPA/600/4-89/001

8. Chemical Analysis

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

Parameter	Saline Effluent	Detection Diluent	Detection Limit (mg/l)
Hardness[1]	X	X	0.5
Alkalinity	X	X	2.0
pH	X	X	---
Specific Conductance	X	X	---
Total Solids and Suspended Solids	X	X	---
Ammonia	X	X	0.1
Total Organic Carbon	X		0.5
Cyanide	X		0.010

[1]Method 314A (Hardness by Calculation) from APHA (1985) Standard Methods for the Examination of Water and Wastewater. 16th Edition

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

Total Metals	Effluent	Freshwater Diluent	Minimum Detection Limit (ug/l)
Total Nickel	X	X	10.0
Total Aluminum	X	X	20.0
Total Lead	X	X	1.0
Total Copper	X	X	1.0
Total Zinc	X	X	20.0
Total Cadmium	X	X	1.0

The above metal analyses may be used to fulfill, in part or in whole, monitoring requirements for these specific metals from Part I.A.9.

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 User Fee Program and/or other permit conditions, such as Part I.A.15, to fulfill any priority pollutant scan requirements.

In addition, the following chemical analyses shall be performed as part of each daily renewal procedures on each dilution and the controls.

Parameter	Beginning of 24-Hour Exposure Period	End of 24-Hour Exposure Period
Dissolved Oxygen	X	X
Temperature	X	
pH	X	
Specific Conductance	X	
Alkalinity	X[1]	
Hardness	X[1]	

[1]These are performed on the 100% effluent and control samples only.

9. 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.
- Raw data and laboratory sheets.
- Any other observations or test conditions affecting test outcome.
- Results of required chemical and physical analyses.

Toxicity test data shall include the following:

Chronic

- Daily survival of test organisms in the controls and all replicates in each dilution. Survival data should be analyzed by Fisher's Exact Test prior to analysis of reproduction data.
- Young per female for all replicates in each dilution for Ceriodaphnia and weight for minnow larvae.
- Dissolved oxygen, pH, specific conductance and temperature for each dilution.
- Results of Dunnett's Procedure and/or other EPA recommended or approved methods for analyzing the data.
- C-NOEC = Chronic No Observed Effect Concentration
- LOEC = Lowest Observed Effect Concentration
- MATC = Maximum Allowable Toxicant Concentration

Acute (These data points are to be obtained 48 hours into the chronic test).

- Survival for each concentration and replication at time 24 and 48 hours.
- Dissolved oxygen, pH and specific conductance for each concentration.
- LC_{50} and 95% confidence limits using one of the following methods in order of preference: Probit, Trimmed Spearman Karber, Moving Average Angle, or the graphical method; printout or copy of these calculations. 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 (% 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), a LC_{50} may be estimated using the graphical method.

10. 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 first quarter that the permit becomes effective and the first report shall be submitted to RIDEM in accordance with the above schedule.

A signed copy of these, and all other reports required herein, shall be submitted to:

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

C. OPERATION AND MAINTENANCE

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

1. 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. The permittee shall conform and adhere to all conditions, practices and regulations as contained in the State of Rhode Island Rules and Regulations for the Treatment, Disposal, Utilization and Transportation of Sewage Sludge.

D. STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. A Storm Water Pollution Prevention Plan (SWPPP) prepared in accordance with good engineering practices shall be maintained by the permittee. This SWPPP shall identify potential sources of pollutants, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the Plan shall describe and ensure the implementation of Best Management Practices (BMPs) which are to be used to reduce or eliminate the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit.

2. The Plan shall be signed by the permittee in accordance with RIPDES Rule 12 and retained on-site. The Plan shall be made available upon request to the Director.

3. If the Plan is reviewed by the Director, he or she may notify the permittee at any time that the Plan does not meet one or more of the minimum requirements of this part. After such notification, the permittee shall make changes to the Plan and shall submit a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have thirty (30) days after such notification to make the necessary changes.

4. The permittee shall immediately amend the Plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the State; a release of reportable quantities of hazardous substances and oil; or if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Changes must be noted and then submitted to this department. Amendments to the Plan may be reviewed by DEM in the same manner as listed above.

5. The SWPPP shall include, at a minimum, the following items:

   a. Description of Potential Pollutant Sources. The Plan must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. It must identify all activities and significant materials, which may potentially be significant pollutant sources. Each plan shall include:

      (1) A site map indicating: a delineation of the drainage area of each storm water outfall, each existing structural control measure to reduce pollutants in storm water runoff, locations where significant materials are exposed to storm water, locations where significant leaks or spills have occurred, a delineation of all impervious surfaces, all surface water bodies, all separate storm sewers, and the locations of the following activities where such areas are exposed to storm water: fueling stations, vehicle and equipment maintenance and/or cleaning areas, material handling areas, material storage areas, process areas, and waste disposal areas;

      (2) A topographic map extending one-quarter of a mile beyond the property boundaries of the facility;

      (3) An estimate of the overall runoff coefficient for the site, determined by an acceptable method, such as, but not limited to, area weighting;

(4) A narrative description of significant materials that have been treated, stored, or disposed of in a manner to allow exposure to storm water between the time of three (3) years prior to the issuance of this permit to the present; method of on-site storage or disposal; materials management practices employed to minimize contact of these materials with storm water runoff between the time of three (3) years prior to the issuance of this permit and the present; materials loading and access areas; the location and description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and description of any treatment the storm water receives;

(5) A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at the facility three (3) years prior to the effective date of this permit to the present;

(6) For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an estimate of the types of pollutants, which are likely to be present in storm water associated with industrial activity;

b. Storm Water Management Controls. The permittee must develop a description of storm water management controls appropriate for the facility and implement such controls. The appropriateness for implementing controls listed in the Plan must reflect identified potential sources of pollutants at the facility. The description of storm water management controls must address the following minimum components, including a schedule for implementing such controls:

(1) *Pollution Prevention Team.* The Plan must identify a specific individual(s) within the facility organization as members of a team that are responsible for developing the Plan and assisting the plant manager in its implementation, maintenance, and revision. The Plan must clearly identify the responsibilities of each team member. The activities and responsibilities of the team must address all aspects of facility's Plan.

(2) *Risk Identification and Assessment/Material Inventory.* The Plan must assess the potential of various sources which contribute pollutants to storm water discharge associated with the industrial activity. Each of the following must be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations, outdoor manufacturing or processing activities, significant dust or particulate generating processes, and on-site waste disposal practices. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced, or discharged; the likelihood of contact with storm water, and the history of significant leaks or spills of toxic or hazardous pollutants.

(3) *Preventative Maintenance.* A preventative maintenance program must involve inspection and maintenance of storm water management devices (i.e., oil/water separators, catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.

(4) *Good Housekeeping.* Good housekeeping requires the maintenance of a clean, orderly facility.

(5) *Spill Prevention and Response Procedure.* Areas where potential spills can occur, and their accompanying drainage points, must be identified clearly in the SWPPP. The potential for spills to enter the storm water drainage system must be eliminated wherever feasible. Where appropriate, specific material handling procedures, storage requirements, and procedures for cleaning up spills must be identified in the Plan and made available to the appropriate personnel. The necessary equipment to implement a clean up must also be made available to personnel. The permittee shall immediately notify the office of releases in excess of reportable quantities.

(6) *Storm Water Management.* The Plan must contain a narrative consideration of the appropriateness of traditional storm water management practices. Based on an assessment of the potential of various sources at the plant to contribute pollutants to storm water discharges associated with industrial activity, the Plan must provide that measures, determined to be reasonable and appropriate, must be implemented and maintained.

(7) *Sediment and Erosion Prevention.* The Plan must identify areas which; due to topography, activities, or other factors; have a high potential for significant soil erosion and identify measures to limit erosion.

(8) *Employee Training.* Employee training programs must inform personnel responsible for implementing activities identified in the Plan, or otherwise responsible for storm water management at all levels, of the components and goals of the Plan. Training should address topics such as spill response, good housekeeping, and material management practices. The Plan must identify periodic dates for such training.

(9) *Visual Inspections.* Qualified plant personnel must be identified to inspect designated equipment and plant areas. Material handling areas must be inspected for evidence of, or the potential for, pollutants entering the drainage system. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records of inspections must be maintained on site for at least five (5) years.

(10) *Recordkeeping and Internal Reporting Procedures.* Incidents such as spills, or other discharges, along with other information describing the quality and quantity of storm water discharges must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.

c. Site Inspection. An annual site inspection must be conducted by appropriate personnel named in the SWPPP to verify that the description of potential pollutant sources is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in storm water discharges associated with industrial activity identified in the Plan are being implemented and are adequate. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records documenting significant observations made during the site inspection must be retained as part of the SWPPP for a minimum of five (5) years.

d. Consistency with Other Plans. Storm water management controls may reflect requirements for Spill Prevention Control and Counter-measure (SPCC) plans under Section 311 of the CWA or Best Management Practices (BMP) Programs

otherwise required by a RIPDES permit and may incorporate any part of such plans into the SWPPP by reference.

D. 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 (the EPA method is noted for reference, other EPA approved methods found in 40 CFR Part 136 may be utilized). 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 that 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):
"could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements; results reported as less than the MDL shall be included as values equal to the MDL, and the average shall be reported as "less than" the calculated value.
For compliance purposes, DEM will replace all data reported as less than the MDL with zeroes, provided that DEM determines that all appropriate EPA approved methods were followed. If the re-calculated average exceeds the permit limitation it will be considered a violation.

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 - EPA Method 200.9
Arsenic, Total	5.0 - EPA Method 206.9
Beryllium, Total	0.2 - Standard Methods 18th Ed. 3113B
Cadmium, Total	1.0 - EPA Method 200.9
Chromium, Total	5.0 - Standard Methods 18th Ed. 3113B
Chromium, Hexavalent***	20.0 - Standard Methods 16th Ed., 312.B
Copper, Total	1.0 - EPA Method 220.2
Lead, Total	1.0 - EPA Method 239.2
Mercury, Total	0.5 - EPA Method 245.1
Nickel, Total	10.0 - EPA Method 200.7
Selenium, Total	5.0 - EPA Method 200.9
Silver, Total	1.0 - Standard Methods 18th Ed. 3113B
Thallium, Total	5.0 - EPA Method 200.9
Zinc, Total	20.0 - EPA Method 200.7
Asbestos	**
Cyanide, Total	10.0 - EPA Method 335.4
Phenols, Total***	50.0 - EPA Method 420.2
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0 - EPA Method 524.2

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL
*** Not a priority pollutant

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).

E. 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 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. A copy of the analytical laboratory report, specifying analytical methods used, shall be included with each report submission. Signed copies of these, and all other reports required herein, shall be submitted to:

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

PART II
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GENERAL REQUIREMENTS

DEFINITIONS

GENERAL REQUIREMENTS

(a) Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(1) The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(2) The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307 or 308 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment of not more than 1 year, or both.

(3) Chapter 46-12 of the Rhode Island General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than $5,000 per day of such violation. Any person who willfully or negligently violates a permit condition is subject to a criminal penalty of not more than $10,000 per day of such violation and imprisonment for not more than 30 days, or both. Any person who knowingly makes any false statement in connection with the permit is subject to a criminal penalty of not more than $5,000 for each instance of violation or by imprisonment for not more than 30 days, or both.

(b) Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

(c) Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(d) Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(e) Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures, and, where applicable, compliance with DEM "Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities" and "Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility Sludge." This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

(f) Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) Violation of any terms or conditions of this permit; (2) Obtaining this permit by misrepresentation or failure to disclose all relevant facts; or (3) A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(g) Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(i) Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

(4) Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or Rhode Island law.

(j) Monitoring and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge over the sampling and reporting period.

(2) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings from continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 and applicable Rhode Island regulations, unless other test procedures have been specified in this permit.

(5) The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall upon conviction, be punished by a fine of not more than $10,000 per violation or by imprisonment for not more than 6 months per violation or by both. Chapter 46-12 of the Rhode Island General Laws also provides that such acts are subject to a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(6) Monitoring results must be reported on a Discharge Monitoring Report (DMR).

(7) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136, applicable State regulations, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(k) Signatory Requirement

All applications, reports, or information submitted to the Director shall be signed and certified in accordance with Rule 12 of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations. Rhode Island General Laws, Chapter 46-12 provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(l) Reporting Requirements

(1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with the permit requirements.

(3) Transfers. This permit is not transferable to any person except after written notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under State and Federal law.

(4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) Twenty-four hour reporting. The permittee shall immediately report any noncompliance which may endanger health or the environment by calling DEM at (401) 222-3961, (401) 222-6519 or (401) 222-2284 at night.

A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following information must be reported immediately:

(i) Any unanticipated bypass which causes a violation of any effluent limitation in the permit; or

(ii) Any upset which causes a violation of any effluent limitation in the permit; or

(iii) Any violation of a maximum daily discharge limitation for any of the pollutants specifically listed by the Director in the permit.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(6) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (2), and (5), of this section, at the time monitoring reports are submitted. The reports shall contain the information required in paragraph (l)(5) of the section.

(7) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.

(m) Bypass

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(1) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (2) and (3) of this section.

(2) Notice.

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.

(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Rule 14.18 of the RIPDES Regulations.

(3) Prohibition of bypass.

(i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, where "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(C) The permittee submitted notices as required under paragraph (2) of this section.

(ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (3)(i) of this section.

(n) Upset

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(1) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (2) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(2) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(a) An upset occurred and that the permittee can identify the cause(s) of the upset;

(b) The permitted facility was at the time being properly operated;

(c) The permittee submitted notice of the upset as required in Rule 14.18 of the RIPDES Regulations; and

(d) The permittee complied with any remedial measures required under Rule 14.05 of the RIPDES Regulations.

(3) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

(o) Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. Discharges which cause a violation of water quality standards are prohibited. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to commencement of such discharges, or if such changes will not violate the effluent limitations specified in this permit, by notice, in writing, to the Director of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(p) Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner consistent with applicable Federal and State laws and regulations including, but not limited to the CWA and the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq., Rhode Island General Laws, Chapters 46-12, 23-19.1 and regulations promulgated thereunder.

(q) Power Failures

In order to maintain compliance with the effluent limitation and prohibitions of this permit, the permittee shall either:

> In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or if such alternative power source is not in existence, and no date for its implementation appears in Part I,

> Halt reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(r) Availability of Reports

Except for data determined to be confidential under paragraph (w) below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM, 291 Promenade Street, Providence, Rhode Island. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Section 46-12-14 of the Rhode Island General Laws.

(s) State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

(t) Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

(u) Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

(v) Reopener Clause

The Director reserves the right to make appropriate revisions to this permit in order to incorporate any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA or State law. In accordance with Rules 15 and 23 of the RIPDES Regulations, if any effluent standard or prohibition, or water quality standard is promulgated under the CWA or under State law which is more stringent than any limitation on the pollutant in the permit, or controls a pollutant not limited in the permit, then the Director may promptly reopen the permit and modify or revoke and reissue the permit to conform to the applicable standard.

(w) Confidentiality of Information

(1) Any information submitted to DEM pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, DEM may make the information available to the pubic without further notice.

(2) Claims of confidentiality for the following information will be denied:

(i) The name and address of any permit applicant or permittee;

(ii) Permit applications, permits and any attachments thereto; and

(iii) NPDES effluent data.

(x) Best Management Practices

The permittee shall adopt Best Management Practices (BMP) to control or abate the discharge of toxic pollutants and hazardous substances associated with or ancillary to the industrial manufacturing or treatment process and the Director may request the submission of a BMP plan where the Director determines that a permittee's practices may contribute significant amounts of such pollutants to waters of the State.

(y) Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, the permittee or any interested person may submit a request to the Director for an adjudicatory hearing to reconsider or contest that decision. The request for a hearing must conform to the requirements of Rule 49 of the RIPDES Regulations.

DEFINITIONS

1. For purposes of this permit, those definitions contained in the RIPDES Regulations and the Rhode Island Pretreatment Regulations shall apply.

2. The following abbreviations, when used, are defined below.

cu. M/day or M^3/day	cubic meters per day
mg/l	milligrams per liter
ug/l	micrograms per liter
lbs/day	pounds per day
kg/day	kilograms per day
Temp. °C	temperature in degrees Centigrade
Temp. °F	temperature in degrees Fahrenheit
Turb.	turbidity measured by the Nephelometric Method (NTU)
TNFR or TSS	total nonfilterable residue or total suspended solids
DO	dissolved oxygen
BOD	five-day biochemical oxygen demand unless otherwise specified
TKN	total Kjeldahl nitrogen as nitrogen
Total N	total nitrogen
NH_3-N	ammonia nitrogen as nitrogen
Total P	total phosphorus
COD	chemical oxygen demand
TOC	total organic carbon
Surfactant	surface-active agent
pH	a measure of the hydrogen ion concentration
PCB	polychlorinated biphenyl
CFS	cubic feet per second
MGD	million gallons per day
Oil & Grease	Freon extractable material
Total Coliform	total coliform bacteria
Fecal Coliform	total fecal coliform bacteria
ml/l	milliliter(s) per liter
NO_3-N	nitrate nitrogen as nitrogen
NO_2-N	nitrite nitrogen as nitrogen
NO_3-NO_2	combined nitrate and nitrite nitrogen as nitrogen
Cl_2	total residual chlorine

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. **RI0000043**

NAME AND ADDRESS OF APPLICANT:

Bradford Printing & Finishing, LLC
P.O. Box 275
Bradford, RI 02808

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Bradford Printing & Finishing, LLC
460 Bradford Road
Bradford, Rhode Island

RECEIVING WATER:

Pawcatuck River

CLASSIFICATION: **B1**

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

The above named applicant has applied to the Rhode Island Department of Environmental Management for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is engaged in dyeing and finishing textiles. The discharge is from a biological wastewater treatment plant.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on Discharge Monitoring Report (DMR) data from September 2004 through September 2009 is shown on Attachment A-1.

III. Permit Limitations and Conditions

The final effluent limitations and monitoring requirements may be found in the draft permit.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

Bradford Dyeing Association, Incorporated, is engaged in the complex manufacturing of textile goods. Their operation consists of desizing, dyeing, printing, and finishing of different types of woven fabrics (natural, synthetic, and blends). The facility's discharge consists primarily of process wastewaters from the manufacturing operation, plus a small amount of sanitary wastewater, cooling waters, and storm water runoff. All discharges are treated in a biological treatment system. The previous permit was issued on November 30, 2001 and was later modified on October 2, 2003.

The effluent limitations and monitoring requirements for Outfall 002 (the discharge from the aeration lagoon) are based upon 40 CFR, Part 410, subpart D – Textile Mill Point Source Regulations, Woven Fabric Finishing subcategory, the Rhode Island Water Quality Regulations for Pollution Control, the RIPDES Regulations, and Best Professional Judgement.

In summary, the most stringent limits were determined from the comparison of the effluent limitation guidelines, water quality based limits, the limits from the previous permit. Details of the calculation and comparison are given in the permit development document, which is available upon request.

Based on a review of the average production data from 2004 thru September 2009, the following annual averages were calculated from the monthly average production data.

Table 1: Average Production Data (lbs/day)

Year	Average Production
2004	64,212
2005	51,880
2006	40,375
2007	40,732
2008	27,701
Jan. – September 2009	8,590

Table 1 shows that annual average production values have declined in recent years. EPA's Guidance Manual for the Use of Production Based Pretreatment Standards, and the Combined Wastestream Formula indicates that "it is generally agreed that a 10 to 20 percent fluctuation is within the range of normal variability while changes higher than this could warrant consideration of alternate limits." Since the variation in Bradford's monthly average production frequently exceeded 20%, it was determined during the previous permit development process that tiered limits were appropriate. As a result, tiers were established at 20,000 lbs/day increments over a range from 40,000 lbs/day to 140,000 lbs/day. These tiers have maintained in the current draft permit.

Water Quality-Based Permit Limitations

The allowable effluent limitations were established on the basis of acute and chronic aquatic life criteria and human health criteria using the following: available instream dilution; an allocation factor; and background concentrations when available and/or appropriate. The aquatic life and human health criteria are specified in the Rhode Island Water Quality Regulations. Aquatic life criteria have been established to ensure the protection and propagation of aquatic life while human health criteria represent the pollutant levels that would not result in a significant risk to public health from ingestion of aquatic organisms. The more stringent of the two criteria was then used in establishing allowable effluent limitations. Details concerning the calculation of potential permit limitations, selection of factors, which influence their calculation, and the selection of final permit limitations are included below or in the attached documents. Bradford's first permit to contain water quality based limits was issued in 1991.

Appendix B of the Water Quality Regulations describes the flows used to determine compliance with human health and aquatic life criteria. The design flow to be utilized for freshwater non-

carcinogen criteria is the lowest average 30 consecutive day low flow with an average recurrence frequency of once in five years (30Q5). Freshwater carcinogenic human health criteria use the harmonic mean flow as the design flow. The harmonic mean flow is a long-term mean flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows. Aquatic life criteria shall not be exceeded at or above the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years (7Q10). Receiving water flow upstream of the wastewater discharge was calculated using the following equation:

$$Q_{River} = \left(\frac{DA_{BDA}}{DA_{USGS}} \right) * \left(Q_{USGS} - \left(Q_{Kenyon} + Q_{BDA} + Q_{Imperial} \right) \right)$$

Where: Q_{River} = River Flow (Receiving Water Flow)
Q_{usgs} = Flow at the Westerly USGS Gage
Q_{Kenyon} = Kenyon Industries, Inc. Average Flow
Q_{BDA} = Bradford Dyeing Association, Inc. Average Flow
$Q_{Imperial}$ = Imperial Wallcovering Average Flow
DA_{BDA} = Drainage Area at Bradford's Discharge
DA_{usgs} = Drainage Area at the Westerly USGS Gage

Attachment C includes the spreadsheet that was used to calculate the various river flows (e.g., 7Q10) using the equation above. Once the river flow was determined, the dilution factor was calculated as:

$$DF = \frac{Q_{River} + Q_{BDA}}{Q_{BDA}}$$

Where: DF = Dilution Factor
Q_{River} = River Flow (Receiving Water Flow)
Q_{BDA} = Bradford Design Flow

In January 2010, Bradford Printing and Finishing, LLC. requested a reduction in the monthly average flow limit from 2.3 MGD to 1.0 MGD. This request was made in order to increase the dilution available at the point of discharge. This request was granted by the DEM and as a result a lower monthly average flow limit of 1.0 MGD has been incorporated into this permit and the water quality limit development process.

It has been observed that there is generally a strong inverse correlation between river flow and hardness. Therefore, a lognormal-lognormal relationship was developed between flow and hardness from data collected at the Westerly US Geological Survey gauging station to establish aquatic life criteria for metals (which are based on hardness). Based on this relationship, a hardness of 24.2 mg/l at the 7Q10 flow of 68.76 cfs was calculated. Details of this relationship are presented in a separate document, which is available upon request.

For toxicity-based ammonia limitations, the Water Quality Regulations include ammonia criteria, which are dependent on both pH and temperature. In the absence of site-specific data on the receiving water, the DEM utilizes USGS's evaluation of all freshwater rivers in the state for the 1999 water year to determine an appropriate assumption for the temperature and pH of the receiving water. This evaluation resulted in the conservative assumptions of 7.5 s.u. for pH and winter and summer water temperatures of 15 °C and 26 °C, respectively. The pH and summer temperature were used to determine the acute and chronic criteria for Total Ammonia Nitrogen of 13.3 mg N/L and 2.08 mg N/L. The pH and winter temperature were used to determine the acute and chronic criteria for Total Ammonia Nitrogen of 13.3 mg N/L and 4.23 mg N/L, respectively. Using these criteria values the Ammonia limits were then calculated using the formulas shown below:

a) Background concentration unknown or available data is impacted by sources that have not yet achieved water quality based limits.

$$Limit_l = (DF) * (Criteria) * (80\%)$$

Where: DF = acute or chronic dilution factor, as appropriate

b) Using available background concentration data.

$$Limit_l = (DF) * (Criteria) * 90\% - (Background) * (DF - 1)$$

Where: DF = acute or chronic dilution factor, as appropriate

The formulas and data noted above were applied with the following exceptions:

A) Pollutants that based on the acute and chronic dilution factors, have a higher allowable chronic limit than allowable acute limit. For this situation, both the "Monthly Average" and "Daily Maximum" limits were set at the allowable acute limit.

B) Total residual chlorine. The limits for total residual chlorine (TRC) were established in accordance with the RIDEM Effluent Disinfection Policy. The "Monthly Average" and "Daily Maximum" were based on a 100% allocation, a zero background concentration, and the appropriate dilution factor(s). The 100% allocation factor for TRC was used due to the non-conservative nature of chlorine and the improbability of the receiving water having a detectable background TRC concentration.

C) Pollutants with water quality based monthly average limits in the previous RIPDES permit. The relaxation of monthly average limits from the previous permit was restricted in accordance with the antibacksliding provisions of the Clean Water Act and the Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations (RIDEM, August 1997).

Antibacksliding

Antibacksliding restricts the level of relaxation of water quality based limits from the previous permit. Section 303(d)(4) of the Clean Water Act addresses antibacksliding as the following:

Section 303(d)(4)

A) Standards not attained - For receiving waters that have not attained the applicable water quality standards, limits based on a TMDL or WLA can only be revised if the water quality standards will be met. This may be done by (i) determining that the cumulative effect of all such revised limits would assure the attainment of such water quality standards; or (ii) removing the designated use which is not being attained in accordance with regulations under Section 303.

B) Standards attained - For receiving waters achieving or exceeding applicable water quality standards, limits can be relaxed if the revision is consistent with the State's Antidegradation Policy.

Therefore, in order to determine whether backsliding is permissible, the first question that must be answered is whether or not the receiving water is attaining the water quality standard. The Office has determined the most appropriate evaluation of existing water quality is by calculating the

pollutant levels, which would result after consideration of all currently valid RIPDES permit limits or historic discharge data (whichever is greater), background data (when available), and any new information (i.e.: dilution factors).

In terms of a RIPDES permit, an increased discharge is defined as an increase in any limitation, which would result in an increased mass loading to a receiving water. The baseline for this comparison would be the monthly average mass loading established by the previous permit. It would be inappropriate to use the daily maximum mass loading since the Policy is not applicable to short-term changes in water quality.

The previous permit contained Total Copper limits of 3.6 ug/l monthly average and 15.1 ug/l daily maximum and Total Lead limits of 0.54 ug/l monthly average and 177 ug/l daily maximum. However, the previous permittee Bradford Dye contested these permit limits and as a result these limits never became final. During the current permit development process the DEM calculated revised limits for Total Copper and Total Lead based on updated background data for the Pawcatuck River. Prior to calculating the revised permit limits, the existing water quality of the Pawcatuck River had to be defined for the purposes of ensuring that the recalculated limits are consistent with the requirements of DEM's Antidegradation Policy. To do this, DEM evaluated existing water quality by determining the pollutant levels which would result under the design conditions appropriate for the particular criteria (i.e., background water quality and historical discharge data).

Using the above-mentioned criteria, the present instream water quality C_p is defined as:

$$C_p = \frac{(DF - 1) * C_b + (1 * C_d)}{DF}$$

where: C_b = background concentration
C_d = discharge data
DF = dilution factor

If the waterbody is a high quality water for the pollutant in question ($C_p < C_{criteria}$), then the discharge requires an evaluation under Tier 2 protection. If the waterbody is not determined to be high quality for that parameter, then antibacksliding will allow an increased permit limit only if it can be assured that water quality standards would be attained. Therefore, the permit limit would be calculated to comply with Tier 1 protection, using the procedures noted previously.

For the purposes of this calculation, the discharge data refers to the maximum of the monthly average limit using traditional methods or the historic discharge level. The historic discharge level is determined by calculating the upper 95th percent confidence interval for the monthly average reported data.

Since the resulting instream concentration is greater than the chronic criteria, the water body is not a high quality water body for either copper or lead and as a result the limits developed using the above-mentioned equations are set as the final limits.

Final Permit Limitations

The final allowable discharge levels will be set equal to the most stringent of either the technology-based limit or the water quality-based limit.

In accordance with 40 CFR 122.4(d)(1)(iii), it is only necessary to establish water quality-based permit limits for those pollutants in the discharge which have the reasonable potential to cause or contribute to the exceedance of instream criteria. In order to evaluate the need for permit limits, the most stringent calculated acute and chronic limits are compared to the Discharge Monitoring Report (DMR) and the State User Fee Program data.

Based on the analysis presented above, permit limits are required for Total Copper and Total

Lead. In addition, technology-based limits are necessary for BOD_5, COD, TSS, Sulfide, Phenol, Total Chromium, and Surfactants. Fecal coliform limits are based on Rhode Island requirements for secondary treatment of sanitary wastewater under the RIPDES Regulations and as provided in 40 CFR 123.25.

The effluent limitations for pH have been established in accordance with the Rhode Island Water Quality Regulations Table 1.8.D.(2) Class Specific Criteria – Class B – Fresh Waters. Table 1.8.D.(2) Class Specific Criteria – Class B – Fresh Waters specifies that the pH must be in the range of 6.5-9.0 s.u. or as naturally occurs. Because the water quality based limitations are more stringent than the Federal Effluent Limitation guideline based limitations, pH limitations of 6.5-9.0 s.u. have been applied to outfall 002A.

Nutrient limits have been established for Total Ammonia. This requirement and the requirements to monitor for Total Kjeldahl Nitrogen (TKN), Total Nitrate, Total Nitrite, Total Nitrogen, and Total Phosphorous are necessary to determine the nutrient loading to the receiving water and will be used to evaluate the need for nutrient limits at a future date.

The State policy is to require a LC_{50} of ≥ 100% effluent. The bioassay requirements in the permit, of two (2) acute and two (2) chronic toxicity test to be completed on the final effluent once per quarter, shall assure control of toxicity in the effluent. The biomonitoring requirements are set fourth in 40 CFR 131.11 and in the State's Water Quality Regulations to assure control of toxicity in the effluent. The permit also includes quarterly monitoring and water quality based limits for Total Cadmium, Total Nickel, Total Aluminum, and Total Zinc as part of updated toxicity testing requirements. Given the fact that the permittee has demonstrated that the treatment system is capable of complying with the previous monthly average Total Zinc and Total Cadmium effluent limits, these limits have been held at the previous monthly average permit limits of 368 ug/l and 2.1 ug/l respectively in order to be consistent with antibacksliding provisions.

V. 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. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. 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 a public hearing, if such hearing is held, 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 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.

VI. 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:

Brian D. Lafaille, P.E.
Sanitary Engineer

RIPDES Program
Office of Water Resources
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700, Extension: 7731

3/25/10
Date

Eric A. Beck, P.E.
Supervising Sanitary Engineer
RIPDES Permitting Section
Office of Water Resources
Department of Environmental Management

ATTACHMENT A-1

DESCRIPTION OF DISCHARGE: Discharge from Biological Treatment Plant
OUTFALL: 002

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE:

PARAMETER	AVERAGE[1]	MAXIMUM[2]
FLOW (MGD)	0.51 MGD	0.85 MGD
Fecal Coliform	16.8 MPN/100 ml	62.3 MPN/100 ml
pH	7.73 S.U. (Minimum)	8.83 S.U. (Maximum)
Cadmium	<1 ug/l	<1 ug/l
Copper	21.84 ug/l	31.25 ug/l
Lead	7.14 ug/l	8.69 ug/l
Zinc	38.58 ug/l	45.88 ug/l
Nitrogen, Ammonia Total (as N)		1.6 mg/l
Nitrogen, Kjeldahl, Total (as N)		6.18 mg/l
Nitrogen, Nitrate Total (as N)		5.67 mg/l
Nitrogen, Nitrite Total (as N)		0.29 mg/l
Phosphorus, Total (as P)		2.24 mg/l

TOXICITY DATA

Date	Cerio. LC50	Pime. LC50	Cerio. C-NOEC	Pime. C-NOEC
9/30/2009	100%	100%	100%	100%
6/30/2009	100%	100%	50%	100%
3/31/2009	100%	100%	100%	100%
12/31/2008	100%	100%	100%	100%
9/30/2008	100%	100%	100%	100%
6/30/2008	21.7%	100%	9.3%	100%
3/31/2008	100%	100%	100%	100%
12/31/2007	100%	100%	100%	91.9%

[1]Data represents the mean of the monthly average data from September 2004 through September 2009

[2]Data represents the mean of the daily maximum data from September 2004 through September 2009

OUTFALL: 002A

Production Rates ≤ 40,000 lb/day

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE:

PARAMETER	AVERAGE[1]	MAXIMUM[2]
Total Production	24074.86 lb/day	
BOD5	50.5 lb/day	98.3 lb/day
BOD5	16.45 mg/l	28.51 mg/l
COD	457.4 lb/day	718.75 lb/day
COD	141.37 mg/l	184.65 mg/l
TSS	115.8 lb/day	193.8 lb/day
TSS	35.06 mg/l	52.89 mg/l
Sulfide	0.21 lb/day	0.30 lb/day
Sulfide	0.10 mg/l	0.12 mg/l
Surfactants	1.23 lb/day	1.62 lb/day
Surfactants	0.39 mg/l	0.47 mg/l
Chromium, Total	0.09 lb/day	0.1161 lb/day
Chromium, Total	0.028 mg/l	0.037 mg/l
Phenol, Total	0.14 lb/day	0.197 lb/day
Phenol, Total	0.66 mg/l	0.68 mg/l

OUTFALL: 002B
Production Rates 40,000 lb/day < 60,000 lb/day

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE:

PARAMETER	AVERAGE[1]	MAXIMUM[2]
Total Production	46669.36 lb/day	
BOD5	79.76 lb/day	171.76 lb/day
BOD5	15.64 mg/l	32.32 mg/l
COD	924.4 lb/day	1469.36 lb/day
COD	190.88 mg/l	267.8 mg/l
TSS	220.08 lb/day	365.76 lb/day
TSS	46.92 mg/l	72.20 mg/l
Sulfide	0.36 lb/day	0.48 lb/day

Sulfide	0.08 mg/l	0.10 mg/l
Surfactants	2.06 lb/day	2.40 lb/day
Surfactants	0.38 mg/l	0.43 mg/l
Chromium, Total	0.07 lb/day	0.088 lb/day
Chromium, Total	0.015 mg/l	0.017 mg/l
Phenol, Total	0.18 lb/day	0.23 lb/day
Phenol, Total	0.04 mg/l	0.05 mg/l

OUTFALL: 002C
Production Rates 60,000 lb/day < 80,000 lb/day

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE:

PARAMETER	**AVERAGE[1]**	**MAXIMUM[2]**
Total Production	62775.66	
BOD5	174.5 lb/day	405.6 lb/day
BOD5	25.83 mg/l	52.16 mg/l
COD	1965 lb/day	4553.16 lb/day
COD	283 mg/l	599.33 mg/l
TSS	284.16 lb/day	560.83 lb/day
TSS	39.83 mg/l	70.83 mg/l
Sulfide	0.41 lb/day	0.51 lb/day
Sulfide	0.06 mg/l	0.08 mg/l
Surfactants	4.08 lb/day	4.56 lb/day
Surfactants	0.69 mg/l	0.73 mg/l
Chromium, Total	0.21 lb/day	0.24 lb/day
Chromium, Total	0.03 mg/l	0.04 mg/l
Phenol, Total	0.39 lb/day	0.92 lb/day
Phenol, Total	0.06 mg/l	0.12 mg/l

[1]Data represents the mean of the monthly average data from September 2004 through September 2009

[2]Data represents the mean of the daily maximum data from September 2004 through September 2009