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

October 21, 2016

CERTIFIED MAIL

Mr. Steven Schnoll, CEO
Arkwright Advanced Coating Incorporated
538 Main Street
Fiskeville, RI 02823

RE: Arkwright Advanced Coating – 538 Main Street, Fiskeville, RI 02823
RIPDES No. RI0000035

Dear Mr. Schnoll:

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, PE of the State Permits Staff at (401) 222-4700, extension 7731.

Sincerely,

Joseph B. Haberek, PE
Principal Sanitary Engineer

Enclosures

Ecc: Job Toll, Arkwright Advanced Coating Inc.
Eric Beck, RIDEM-OWR
Traci Pena, RIDEM-OWR

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,

Arkwright Advanced Coating Incorporated
538 Main Street
Fiskeville, RI 02823

is authorized to discharge from a facility located at

538 Main Street
Fiskeville, RI 02823

to receiving waters named

Pawtuxet River – North Branch

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

This permit shall become effective on November 1, 2016.

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

This permit supersedes the permit issued on May 18, 2011 and subsequently modified on January 9, 2013.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this 21st day of October, 2016.

Angelo S. Liberti

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) 100 (large cooling tower blowdown discharge) and 200 (small cooling tower blowdown discharge). Each discharge 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	--- GPD	3,000 GPD				1/Month	Estimate
TSS			--- mg/l		--- mg/l	1/Month	Grab
pH			(6.5 s.u.)		(9.0 s.u.)	1/Month	4 Grabs[1]

[1] Compliance with these limitations shall be determined by taking a minimum of four (4) grab samples equally spaced over the course of a normal operating day. The maximum value to be reported is the highest individual measurement obtained during the monitoring period. The minimum value to be reported is the lowest individual measurement obtained during the monitoring period.

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.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 100 – internal outfall located prior to where the large cooling tower blowdown discharge combines with the small cooling tower discharge and Outfall 200 – internal outfall located prior to where the small cooling tower blowdown discharge combines with the large cooling tower discharge.

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) 013 (non-contact cooling water).

   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
Flow	--- GPD	31,500 GPD				1/Month	Measurement
pH influent			--- s.u.		--- s.u.	1/Month	4 Grabs[1]
pH effluent			--- s.u.		--- s.u.	1/Month	4 Grabs[1]
pH change					0.5 s.u.[2]	1/Month	Calculated

[1] Compliance with these limitations shall be determined by taking a minimum of four (4) grab samples equally spaced over the course of a normal operating day. The maximum value to be reported is the highest individual measurement obtained during the monitoring period.. The minimum value to be reported is the lowest individual measurement obtained during the monitoring period.

2 In no case shall the discharge cause the receiving water's pH to be outside of the range of 6.5-9.0 s.u.

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

Sampling for influent and effluent shall be conducted using appropriate allowances for hydraulic detention (flow-through) time. These values will then be used to calculate the pH change. Effluent samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 013. (Non-contact cooling water)

3. a. The pH of the effluent shall not be less than 6.5 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

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

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

4. Unless authorized elsewhere in this Permit, the permittee must meet the following requirements concerning maintenance chemicals for cooling tower blowdown waste streams. Maintenance chemicals shall be defined as any man-induced additives to the above-referenced waste streams. This permit prohibits the use of additives expected to pose significant risks to wildlife or human health based on bioconcentration/bioaccumulation data. The permittee is required to demonstrate that the expected discharge concentration of the additive(s) to be used will not be harmful to aquatic life. This requirement is imposed in lieu of a continuing monitoring program for the additives in the discharge.

5. The permittee shall evaluate the use of non-intrusive methods for cooling system maintenance in order to minimize chemical use at the facility and subsequent discharge to state surface waters. If chemical addition is the only alternative the permittee should attempt to utilize maintenance chemicals that will degrade rapidly, either due to hydrolytic decomposition or biodegradation.

   a. Maintenance chemicals must not contain any compounds that are listed as being a cause for impairment of the receiving water body as listed in the most recent State of Rhode Island 303(d) List of Impaired Waters. In addition, any maintenance chemicals or biocides that contain tributyl tin, bis (tributyltin) oxide, or chlorinated phenols are strictly prohibited by this permit.

   b. Algicides and biocides are to be used in accordance with registration requirements of the Federal Insecticide, Fungicide and Rodenticide Act.

   c. The permittee must keep sufficient documentation on-site to show that the above requirements are being met. The following information shall be made available for on-site review by Department personnel during normal working hours:

      i. Material Safety Data Sheets (MSDS) for each additive.
      ii. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/U.S. EPA registration number.
      iii. A bound logbook that documents the quantity of additives added to the discharge, the frequency of additive applications, the duration of additive applications, and the approximate concentration of each additive in the blowdown.

6. This permit authorizes the use of the chemical additive Stabrom Plus – cooling tower biocide for the treatment of the small and large cooling towers. This chemical additive may only be used in a manner such that its concentration in the blowdown discharge will not exceed 1.5 mg/l. This permit also authorizes the use of the chemical additive AWM-413 for the treatment of the small and large cooling towers. AWM-413 may only be used in such a manner such that the dosage concentration into the cooling towers does not exceed 100 mg/l.

7. The permittee shall obtain Department approval before increasing the amount of any of the treatment chemicals listed in Part I.A.6 or prior to using any other additive(s) in conjunction with or in place of the treatment chemicals listed in Part I.A.6 of this permit. Prior to using any other chemical additives the permittee shall submit for DEM approval a complete list of all chemical additives, including Material Safety Data Sheets. The permittee shall not begin to

use any additional chemical additives other than those specified in Part I.A.6 of this permit without prior written approval from the Office of Water Resources.

8. 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 C.F.R. s122.21(g)(7); or

      (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(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 C.F.R. s122.21(g)(7); or

      (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(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.

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

B. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. A Stormwater Pollution Prevention Plan (SWPPP) shall be maintained by the permittee. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of stormwater 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 stormwater discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit. **A copy of this SWPPP shall be submitted to the RIDEM RIPDES Program within sixty (60) days of the effective date of the permit.**

2. The Plan shall be signed by the permittee in accordance with RIPDES Rule 12 and retained on-site for at least five (5) years. 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 from the Director, the permittee shall make changes to the Plan and shall submit to the Director 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 stormwater 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 Part B.3. of this permit.

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 stormwater 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 stormwater outfall, each existing structural control measure to reduce pollutants in stormwater runoff, locations where significant materials are exposed to stormwater, 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 stormwater: 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 stormwater 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 stormwater 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 stormwater runoff; and description of any treatment the stormwater 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) A list of any pollutants limited in effluent guidelines to which a facility is subject under 40 CFR Subchapter N, any pollutants listed on a RIPDES permit to discharge process water, and any information required under RIPDES Rule 11.02(a)(14)(iii)-(v) or 40 CFR 122.21(g)(iii)-(v);

(7) For each area of the facility that generates stormwater 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 stormwater associated with industrial activity;

(8) A summary of existing sampling data describing pollutants in stormwater discharges from the facility; and

b. Stormwater Management Controls. The permittee must develop a description of stormwater 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 stormwater 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 the facility's Plan.

(2) *Risk Identification and Assessment/Material Inventory.* The Plan must assess the potential of various sources which contribute pollutants to stormwater discharge associated with the industrial activity. The Plan must include an inventory of the types of materials handled. 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 stormwater, and the history of significant leaks or spills of toxic or hazardous pollutants.

(3) *Controls Specific to Plastic Products Manufacturers.* The SWPPP must address minimizing the discharge of plastic resin pellets in the stormwater discharges. Control measures to be considered for implementation (or their equivalents) must include minimization of spills, cleaning up of spills promptly and thoroughly, sweeping thoroughly, pellet capturing, employee education, and disposal precautions.

(4) *Preventative Maintenance.* A preventative maintenance program must involve inspection and maintenance of stormwater 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.

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

(6) *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 stormwater 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.

(7) *Stormwater Management.* The Plan must contain a narrative consideration of the appropriateness of traditional stormwater management practices. Based on an assessment of the potential of various sources at the facility to contribute pollutants to stormwater discharges associated with industrial activity (see Part B.5.b.2 of this permit), the Plan must provide that measures, determined to be reasonable and appropriate, must be implemented and maintained.

(8) *Soil 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.

(9) *Employee Training.* Employee training programs must inform personnel responsible for implementing activities identified in the Plan, or otherwise responsible for stormwater 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.

(10) *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.

(11) *Recordkeeping and Internal Reporting Procedures.* Incidents such as spills, or other discharges, along with other information describing the quality and quantity of stormwater 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 required under Part B.5.a is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in stormwater 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. Stormwater 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 be incorporated by reference.

C. 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. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

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

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 maintained onsite. 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.

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

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;

2. results reported as less than the MDL shall be reported as zero in accordance with the DEM's DMR Instructions, provided that all appropriate EPA approved methods were followed.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", or zero. 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.

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	3.0
Arsenic, Total	1.0
Beryllium, Total	0.2
Cadmium, Total	0.1
Chromium, Total	1.0
Chromium, Hexavalent	20.0
Copper, Total	1.0
Lead, Total	1.0
Mercury, Total	0.2
Nickel, Total	1.0
Selenium, Total	2.0
Silver, Total	0.5
Thallium, Total	1.0
Zinc, Total	5.0
Asbestos	**
Cyanide, Total	10.0
Phenols, Total***	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0

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

NOTE:

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

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

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

D. 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

Beginning on the effective date of this permit, monitoring results obtained during the previous quarter shall be summarized and reported on Discharge Monitoring Report (DMR) Forms, postmarked no later than the 15th day of the month following the completed quarter as follows:

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

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

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

3. Submittal of DMRs Using NetDMR

a. Within six (6) months of the effective date of this permit the permittee shall submit its monitoring data to DEM electronically using NetDMR. When the permittee begins submitting DMRs using NetDMR, it is no longer required to submit hard copies of DMRs to DEM.

b. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the permittee must submit electronic copies of documents in NetDMR that are directly related to the DMR. These include the following:

- DMR Cover Letters
- Below Detection Limit summary tables

All other reports should be submitted to DEM in hard copy form via regular US mail.

c. Submittal of Requests and Reports to DEM

The following requests, reports, and information described in this permit shall be submitted to the DEM as a hard copy via regular US mail:

A. Transfer of Permit notice
B. Request for changes in sampling location
C. Request for reduction in testing frequency
D. Request for change in chemical additive products or significantly adjusting the concentration of these pollutants.

These reports, information, and requests shall be submitted to DEM by hard copy mail to the following address:

Rhode Island Department of Environmental Management

RIPDES Program
235 Promenade Street
Providence, RI 02908

d. Submittal of Reports in Hard Copy Form.

The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated with originals submitted to DEM.

A. Written notifications required under Part II;
B. Notice of unauthorized discharges;
C. Amendments to the SWPPP;

This information shall be submitted to DEM at the following address:

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

e. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to the DEM. This includes verbal reports and notifications which require reporting within 24 hours. (See Part II.(I)(5) General Requirements for 24-hour reporting). Verbal reports and verbal notifications shall be made to DEM at (401) 222-4700 or (401) 222-3070 at night.

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) 222-4700 or (401) 222-3070 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

STATEMENT OF BASIS

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

RIPDES PERMIT NO.

RI0000035

NAME AND ADDRESS OF APPLICANT:

Arkwright Advanced Coating, Inc.
538 Main Street
Fiskeville, RI 02823

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Arkwright Advanced Coating, Inc.
538 Main Street
Fiskeville, RI 02823

RECEIVING WATER:

Pawtuxet River – North Branch
(Water Body ID #: RI0006016R-06C)

CLASSIFICATION:

B

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

The above named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is engaged in the converting of plastic films and papers for imaging purposes. The discharges from the site are varied and consist of non-contact cooling water, cooling tower blowdown, air conditioner condensate, and stormwater.

Discharge Location

Outfall 002 discharges to an unnamed wetland tributary to the North Branch of the Pawtuxet River. All other outfalls discharge directly to the North Branch of the Pawtuxet River. The segment of the Pawtuxet River where the discharges occur is defined as water body identification number RI0006016R-06C according to the RI Water Quality Regulations. This particular segment begins at the Arkwright Dam and extends to the confluence of the North and South Branches of the Pawtuxet River at Riverpoint. This segment is a Class B water body and is designated as a warm water fishery according to the RI Water Quality Regulations. Water use classification "B" designates these waters for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. According to the 2014 303(d) List of Impaired Waters, there are no existing water quality impairments that have been identified for this water body.

II. Permit Limitations and Conditions

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the draft permit. Historic effluent data may be found in **Attachment A**.

III. Permit Basis and Explanation of Effluent Limitation Derivation

The Facility

On September 28, 1978, a NPDES permit was first issued to Arkwright Incorporated authorizing the discharge to the Pawtuxet River from outfall 001. Since that time the facility has undergone many changes. The previous permit was issued on May 18, 2011 which authorized the discharge of stormwater with the potential for industrial exposure, non-contact cooling water, boiler blowdown, cooling tower blowdown, and air conditioner condensate. On January 9, 2013 the permit was formally modified establishing two new internal outfalls (100 and 200) and eliminating outfall 003. Outfall 100 is an internal outfall associated with the large cooling tower blowdown discharge location. Outfall 200 is also an internal outfall associated with the small cooling tower blowdown discharge location. Outfall 003 which was associated with a discharge of boiler blowdown was eliminated and removed from the permit. A summary of the remaining outfalls for which Arkwright is seeking permit coverage and their descriptions are provided in **Table 1**. In addition, the physical location of each of the outfalls in relation to the Arkwright facility are shown in the Site Layout contained in **Attachment B**.

Table 1

Outfall Number	Description
002	Air Conditioner Condensate & Stormwater
100	Cooling Tower Blowdown (Large Tower)
200	Cooling Tower Blowdown (Small Tower)
013	Non-Contact Cooling Water
009, 010, 011, 012	Stormwater

General Requirements

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: identifying applicable technology-based limits; calculating allowable water-quality based discharge levels based on instream criteria, background data and available dilution; establishing Best Professional Judgement (BPJ) limits in accordance with Section 402 of the CWA; and assigning the most stringent as the final discharge limitations.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.

Appendix B of the Water Quality Regulations describes the flows used to determine compliance with the aquatic life criteria, specifying that the design flow to be utilized for 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). For determination of the 7Q10 flow, data was taken from the analysis completed by the DEM in Appendix B of the 1999 Dissolved Oxygen Waste Load Allocation Strategy where variations in flow with respect to distance along the Pawtuxet River were calculated. The 7Q10 flow of 19.77 CFS was specifically calculated at the location of the Arkwright Dam on the Pawtuxet River. Using the specific low flow calculated at the Arkwright Dam on the Pawtuxet River a dilution factor was then determined for each outfall, and later used to establish the allowable water quality based discharge concentrations for each outfall, using the following equation:

$$DF = \frac{Q_D + Q_{dis.}}{Q_{dis.}}$$

Where: DF = Dilution Factor
Q_D = Design Flow (Receiving Water 7Q10 Flow)
$Q_{dis.}$ = Discharge Flow

Outfalls 100 and 200

The dilution factor was determined to be 2130. This is based on the maximum total discharge allowable from both cooling towers of 6000 GPD and a 7Q10 design flow of 19.77 cfs.

Outfall 013

The dilution factor was determined to be 405. Based on a design flow of 19.77 cfs and a maximum discharge flow of 0.049 cfs (31,500 gpd).

Water Quality Based Permit Limitations

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. The allowable effluent limitations were established based on the non-class A freshwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the Rhode Island Water Quality Regulations, as amended, using 80% allocation when no background data was available and 90% allocation when background data is available. Since there is no background data available, the allowable water quality-based discharge levels are set equal to 80% of the water quality criteria for Class B waters as listed in Appendix B of the Rhode Island Water Quality Regulations.

Water quality-based limitations were calculated as follows:

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

$$Limit = (DF)^* (Criteria)^*(80\%)$$

The DEM examined the permit application data and DMR data reported for the monitoring period covering July 2005 to July 2010 to determine if any pollutants have reasonable potential to exceed the applicable permit limitations using the dilution factor of 2,130. A summary of applicable water quality based permit limits calculated using water quality criteria and dilution can be found in **Attachment C**. No effluent limitations were established based on the non-class A freshwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the Rhode Island Water Quality Regulations due to the fact that for outfalls 009, 010, 011, 012, and 013 the permittee listed all toxic and conventional pollutants in the April 2016 reapplication as not believed present. Therefore there is no reasonable potential to violate Water Quality criteria and, for that reason, no limits have been assigned.

Conventional Pollutants

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.

An effluent limitation for temperature has not been established due to the fact that the discharges do not have reasonable potential to violate the Rhode Island Water Quality Regulations in accordance with Table 1.8.D.(2) Class Specific Criteria – Class B Fresh Waters. When calculating the allowable maximum discharge temperature for outfalls 100, 200 and 013, the total maximum discharge flows were selected for use in the mass balance equation in **Attachment D**. Based on the results of the mass balance calculation a maximum discharge temperature of 212 degree F (the boiling point of water) at outfalls 100, 200, and 013 would not violate the water quality regulations for temperature. Therefore, there is no reasonable potential for the discharges from outfalls 100, 200, and 013 to violate water quality standards and as a result a daily maximum temperature limit has not been assigned.

Monitoring for Total Suspended Solids will be required at internal outfalls 100 and 200 on a monthly basis in order to establish a database of loadings for typical contaminants associated with cooling tower blowdown discharges.

Treatment Chemicals

The use of cooling tower treatment chemicals at the facility were approved for use based on the estimated wastestream concentrations provided by the permittee and the ecological toxicity information provided in the Material Safety Data Sheets associated with each treatment chemical. DEM conducted the toxicity evaluations based on end of pipe concentrations rather than considering dilution in order to use the most conservative approach when evaluating whether or not to authorize the use of the maintenance and treatment chemicals used that the Fiskeville, RI facility. Parts I.A.6-9 of the permit include specific restrictions and requirements regarding the use and management of cooling system maintenance chemicals.

Non – Contact Cooling Water

The monitoring requirements established for pH for outfall 013 are consistent with the 2013 Rhode Island Pollutant Discharge Elimination System General Permit for Non-Contact Cooling Water Discharges for discharges to fresh water warm water habitats with a dilution factor equal to or greater than fifteen.

Stormwater

In accordance with the RIPDES Regulations those facilities which fall within SIC 3081 are required to develop a Stormwater Pollution Prevention Plan (SWPPP). Therefore, SWPPP requirements have been included in the permit that are consistent with the 2013 RIPDES Multi-Sector Industrial Stormwater General Permit associated with Industrial Activity (MSGP) including Subpart Y – Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries. The 2013 MSGP does not assign monitoring requirements for stormwater discharges associated with those industries who fall under SIC 3081 – Unsupported Paper & Plastic Films. Only those SIC codes between 3011, 3021, 3052, 303, 3061, and 3069 within Sector Y are required to meet numeric effluent limitations or are assigned benchmark monitoring requirements. Consistent with Sector Y of the 2013 MSGP, Arkwright's SWPPP is required to address the minimization of the discharge of plastic resin pellets in stormwater discharges. The SWPPP must include control measures to be considered for implementation (or their equivalents) which address minimizing spills, cleaning up of spills promptly and thoroughly, sweeping thoroughly, pellet capturing, employee education, and disposal precautions. Although this permit authorizes the discharge of stormwater from outfalls 002, 009, 010, 011, and 012 monitoring requirements are not proposed.

Anitbacksliding/Antidegradation

The Anitbacksliding Provision of the Clean Water Act (found at Section 402(o) and repeated at 40 CFR 122.44(l)) prohibits reissuing a permit containing less stringent effluent limits than the comparable limits from the previous permit. Since none of the permit limits, both concentration and mass loadings, are less stringent than in the previous permit, antibacksliding regulations are being met. The draft permit is being reissued with limitations as stringent or more stringent than those in the existing permit with no change to the outfall locations.

Selection of Final Permit Limits

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41(j), 122.44(l), and 122.48 to yield data representative of the discharge. The Office has determined that all permit limitations are consistent with the Rhode Island Antidegradation Policy.

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

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

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. 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.

V. **DEM Contact**

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

Brian D. Lafaille, PE
Senior Sanitary Engineer
RIPDES Program
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700, ext. 7731

8/22/16
Date

Joseph B. Haberek, PE
Principal Sanitary Engineer
Office of Water Resources
Department of Environmental Management

ATTACHMENT A

Note: *Discharge data presented below reflects monitoring data submitted following Arkwright's relocation of the cooling tower blowdown discharges to the Pawtuxet River which was completed on March 27, 2014.*

DESCRIPTION OF DISCHARGE: Large Cooling Tower Blowdown
DISCHARGE: 100A

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:

PARAMETER	AVERAGE[1]
FLOW (gal/day) - Daily Maximum	2850
pH (s.u.) – Minimum	7.7
pH (s.u.) – Maximum	7.7
Total Suspended Solids (mg/l) – Monthly Average	3.4
Total Suspended Solids (mg/l) – Daily Maximum	3.4

[1] Flow data represents the mean of the daily maximum values reported on a quarterly basis from the reporting period ending June 30, 2014 to June 30, 2015. pH data represents the mean of the minimum and maximum pH values reported on a quarterly basis from the reporting period ending June 30, 2014 to June 30, 2015. TSS data represents the mean of the monthly average and daily maximum values reported on a quarterly basis from the reporting period ending June 30, 2014 to June 30, 2015. There was no discharge from outfall 100A from June 30, 2015 to March 31, 2016.

DESCRIPTION OF DISCHARGE: Small Cooling Tower Blowdown
DISCHARGE: 200A

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:

PARAMETER	AVERAGE[1]
FLOW (gal/day) - Daily Maximum	2867
pH (s.u.) – Minimum	7.1
pH (s.u.) – Maximum	7.5
Total Suspended Solids (mg/l) – Monthly Average	9.0
Total Suspended Solids (mg/l) – Daily Maximum	9.9

[1] Flow data represents the mean of the daily maximum values reported on a quarterly basis from the reporting period ending June 30, 2014 to March 31, 2015. pH data represents the mean of the minimum and maximum pH values reported on a quarterly basis from the reporting period ending June 30, 2014 to March 31, 2015. TSS data represents the mean of the monthly average and daily maximum values reported on a quarterly basis from the reporting period ending June 30, 2014 to March 31, 2015. There was no discharge from outfall 200A from the reporting period ending March 31, 2015 to March 31, 2016.

DESCRIPTION OF DISCHARGE: Non-Contact Cooling Water
DISCHARGE: 013A

No Discharge from the reporting period ending June 30, 2014 to March 31, 2016.

DESCRIPTION OF DISCHARGE: Stormwater and Air Conditioner Condensate
DISCHARGE: 002

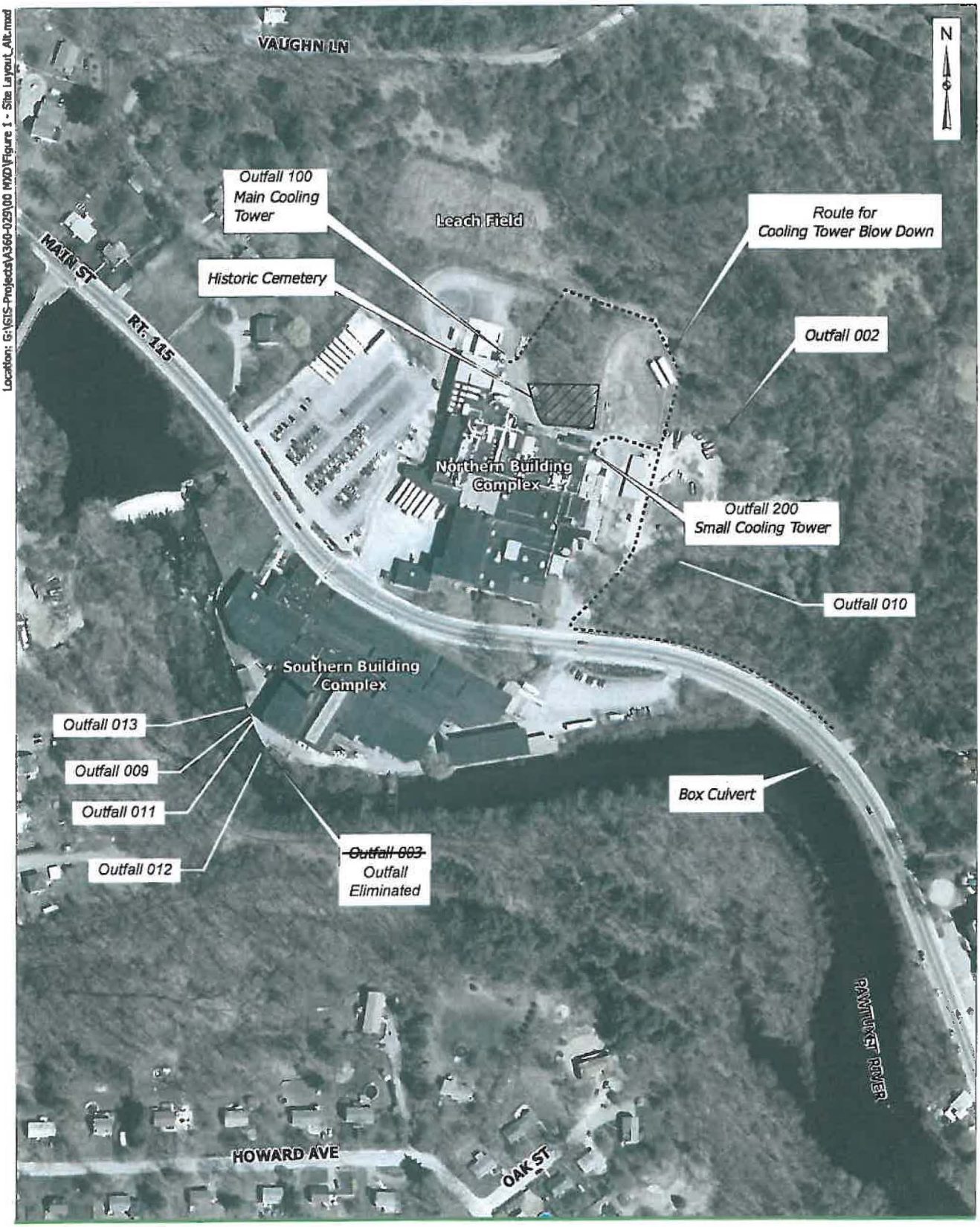
Monitoring was not required for this outfall.

DESCRIPTION OF DISCHARGE: Stormwater
DISCHARGE: 009, 010, 011, and 012

Monitoring not required for these outfalls.

ATTACHMENT B

Facility Site Layout



ess group
environmental consulting
& engineering services

Arkwright Advanced Coating, INC,
Coventry, RI

1 inch = 250 feet

0 250 Feet

Source: 1) USGS High Resolution Orthoimagery Providence, RI

Site Layout
04/08/2016

Figure
1

ATTACHMENT C

Water Quality Based Permit Limit Development

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY SPECIFIC DATA INPUT SHEET

NOTE: LIMITS BASED ON RI WATER QUALITY CRITERIA DATED JULY 2006

FACILITY NAME: Arkwright Advanced Coating

RIPDES PERMIT #: RI0000035

	DISSOLVED BACKGROUND DATA (ug/L)	ACUTE METAL TRANSLATOR	CHRONIC METAL TRANSLATOR
ALUMINUM	NA	NA	NA
ARSENIC	NA	1	1
CADMIUM	NA	1.002000673	0.967000673
CHROMIUM III	NA	0.316	0.86
CHROMIUM VI	NA	0.982	0.962
COPPER	NA	0.96	0.96
LEAD	NA	0.993001166	0.993001166
MERCURY	NA	0.85	0.85
NICKEL	NA	0.996	0.997
SELENIUM	NA	NA	NA
SILVER	NA	0.85	NA
ZINC	NA	0.978	0.986
AMMONIA (as N)	NA		

USE NA WHEN NO DATA IS AVAILABLE

NOTE 1: METAL TRANSLATORS FROM RI WATER QUALITY REGS.

pH =	7.5 S.U.
HARDNESS =	25.0 (mg/L as CaCO3)

FLOW DATA	
DESIGN FLOW =	0.006 MGD
=	0.009 CFS
7Q10 FLOW =	19.770 CFS
7Q10 (JUNE-OCT) =	19.770 CFS
7Q10 (NOV-MAY) =	19.770 CFS
30Q5 FLOW =	19.770 CFS
HARMONIC FLOW =	19.770 CFS

DILUTION FACTORS	
ACUTE =	**2130.466**
CHRONIC =	**2130.466**
(MAY-OCT) =	**2130.466**
(NOV-APR) =	**2130.466**
30Q5 FLOW =	**2130.466**
HARMONIC FLOW =	**2130.466**

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Arkwright Advanced Coating RIPDES PERMIT #: RI0000035

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:							
TOXIC METALS AND CYANIDE							
ANTIMONY	7440360		450	766967.8464	10	640	17043.72992
ARSENIC (limits are total recoverable)	7440382	NA	340	579486.8173	150	1.4	2386.122189
ASBESTOS	1332214			No Criteria			No Criteria
BERYLLIUM	7440417		7.5	12782.79744	0.17		289.7434086
CADMIUM (limits are total recoverable)	7440439	NA	0.522206507	888.2575538	0.093696824		165.1439758
CHROMIUM III (limits are total recoverable)	16065831	NA	183.0659069	987381.6061	23.81311337		47193.52009
CHROMIUM VI (limits are total recoverable)	18540299	NA	16	27769.82472	11		19488.67247
COPPER (limits are total recoverable)	7440508	NA	3.640069619	6462.537863	2.739313654		4863.346051
CYANIDE	57125		22	37496.20582	5.2	140	8862.739558
LEAD (limits are total recoverable)	7439921	NA	13.88217279	23827.16274	0.540968344		928.5103247
MERCURY (limits are total recoverable)	7439976	NA	1.4	2807.202575	0.77	0.15	300.7717045
NICKEL (limits are total recoverable)	7440020	NA	144.9178377	247489.0267	16.09589771	4600	27515.96122
SELENIUM (limits are total recoverable)	7782492	NA	20	34087.45984	5	4200	8521.86496
SILVER (limits are total recoverable)	7440224	NA	0.31788916	637.413763	NA		No Criteria
THALLIUM	7440280		46	78401.15763	1	0.47	801.0553062
ZINC (limits are total recoverable)	7440666	NA	36.20176511	63089.27475	36.49789406	26000	63089.27475
VOLATILE ORGANIC COMPOUNDS							
ACROLEIN	107028		2.9	4942.681677	0.06	290	102.2623795
ACRYLONITRILE	107131		378	644252.991	8.4	2.5	4260.93248
BENZENE	71432		265	451658.8429	5.9	510	10055.80065
BROMOFORM	75252		1465	2496906.433	33	1400	56244.30874
CARBON TETRACHLORIDE	56235		1365	2326469.134	30	16	27269.96787
CHLOROBENZENE	108907		795	1354976.529	18	1600	30678.71386
CHLORODIBROMOMETHANE	124481			No Criteria		130	221568.489
CHLOROFORM	67663		1445	2462818.973	32	4700	54539.93574
DICHLOROBROMOMETHANE	75274			No Criteria		170	289743.4086
1,2DICHLOROETHANE	107062		5900	10055800.65	131	370	223272.862
1,1DICHLOROETHYLENE	75354		580	988536.3354	13	7100	22156.8489
1,2DICHLOROPROPANE	78875		2625	4473979.104	58	150	98853.63354
1,3DICHLOROPROPYLENE	542756			No Criteria		21	35791.83283
ETHYLBENZENE	100414		1600	2726996.787	36	2100	61357.42771
BROMOMETHANE (methyl bromide)	74839			No Criteria		1500	2556559.488
CHLOROMETHANE (methyl chloride)	74873			No Criteria			No Criteria
METHYLENE CHLORIDE	75092		9650	16447199.37	214	5900	364735.8203

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Arkwright Advanced Coating RIPDES PERMIT #: RI0000035

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,1,2,2TETRACHLOROETHANE	79345		466	794237.8143	10	40	17043.72992
TETRACHLOROETHYLENE	127184		240	409049.5181	5.3	33	9033.176858
TOLUENE	108883		635	1082276.85	14	15000	23861.22189
1,2TRANSDICHLOROETHYLENE	156605			No Criteria		10000	17043729.92
1,1,1TRICHLOROETHANE	71556			No Criteria			No Criteria
1,1,2TRICHLOROETHANE	79005		900	1533935.693	20	160	34087.45984
TRICHLOROETHYLENE	79016		1950	3323527.334	43	300	73288.03866
VINYL CHLORIDE	75014			No Criteria		2.4	4090.495181
ACID ORGANIC COMPOUNDS							
2CHLOROPHENOL	95578		129	219864.116	2.9	150	4942.681677
2,4DICHLOROPHENOL	120832		101	172141.6722	2.2	290	3749.620582
2,4DIMETHYLPHENOL	105679		106	180663.5372	2.4	850	4090.495181
4,6DINITRO2METHYL PHENOL	534521			No Criteria		280	477224.4378
2,4DINITROPHENOL	51285		31	52835.56275	0.69	5300	1176.017364
4NITROPHENOL	88755			No Criteria			No Criteria
PENTACHLOROPHENOL	87865		0.058191123	99.17937815	0.044644576	30	76.09100903
PHENOL	108952		251	427797.621	5.6	1700000	9544.488755
2,4,6TRICHLOROPHENOL	88062		16	27269.96787	0.36	24	613.5742771
BASE NEUTRAL COMPUNDS							
ACENAPHTHENE	83329		85	144871.7043	1.9	990	3238.308685
ANTHRACENE	120127			No Criteria		40000	68174919.68
BENZIDINE	92875			No Criteria		0.002	3.408745984
POLYCYCLIC AROMATIC HYDROCARBONS				No Criteria		0.18	306.7871386
BIS(2CHLOROETHYL)ETHER	111444			No Criteria		5.3	9033.176858
BIS(2CHLOROISOPROPYL)ETHER	108601			No Criteria		65000	110784244.5
BIS(2ETHYLHEXYL)PHTHALATE	117817		555	945927.0106	12	22	20452.4759
BUTYL BENZYL PHTHALATE	85687		85	144871.7043	1.9	1900	3238.308685
2CHLORONAPHTHALENE	91587			No Criteria		1600	2726996.787
1,2DICHLOROBENZENE	95501		79	134645.4664	1.8	1300	3067.871386
1,3DICHLOROBENZENE	541731		390	664705.4669	8.7	960	14828.04503
1,4DICHLOROBENZENE	106467		56	95444.88755	1.2	190	2045.24759
3,3DICHLOROBENZIDENE	91941			No Criteria		0.28	477.2244378
DIETHYL PHTHALATE	84662		2605	4439891.644	58	44000	98853.63354
DIMETHYL PHTHALATE	131113		1650	2812215.437	37	1100000	63061.8007
DI-n-BUTYL PHTHALATE	84742			No Criteria		4500	7669678.464
2,4DINITROTOLUENE	121142		1550	2641778.138	34	34	57948.68173

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Arkwright Advanced Coating RIPDES PERMIT #: RI0000035

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,2DIPHENYLHYDRAZINE	122667		14	23861.22189	0.31	2	528.3556275
FLUORANTHENE	206440		199	339170.2254	4.4	140	7499.241165
FLUORENE	86737			No Criteria		5300	9033176.858
HEXACHLOROBENZENE	118741			No Criteria		0.0029	4.942681677
HEXACHLOROBUTADIENE	87683			No Criteria		180	306787.1386
HEXACHLOROCYCLOPENTADIENE	77474		0.35	596.5305472	0.008	1100	13.63498394
HEXACHLOROETHANE	67721		49	83514.27661	1.1	33	1874.810291
ISOPHORONE	78591		5850	9970582.003	130	9600	221568.489
NAPHTHALENE	91203		115	196002.8941	2.6		4431.369779
NITROBENZENE	98953		1350	2300903.539	30	690	51131.18976
N-NITROSODIMETHYLAMINE	62759			No Criteria		30	51131.18976
N-NITROSODI-N-PROPYLAMINE	621647			No Criteria		5.1	8692.302259
N-NITROSODIPHENYLAMINE	86306		293	499381.2867	6.5	60	11078.42445
PYRENE	129000			No Criteria		4000	6817491.968
1,2,4trichlorobenzene	120821		75	127827.9744	1.7	70	2897.434086
PESTICIDES/PCBs							
ALDRIN	309002		3	5113.118976		0.0005	0.852186496
Alpha BHC	319846			No Criteria		0.049	83.51427661
Beta BHC	319857			No Criteria		0.17	289.7434086
Gamma BHC (Lindane)	58899		0.95	1619.154342		1.8	3067.871386
CHLORDANE	57749		2.4	4090.495181	0.0043	0.0081	7.328803866
4,4DDT	50293		1.1	1874.810291	0.001	0.0022	1.704372992
4,4DDE	72559			No Criteria		0.0022	3.749620582
4,4DDD	72548			No Criteria		0.0031	5.283556275
DIELDRIN	60571		0.24	409.0495181	0.056	0.00054	0.920361416
ENDOSULFAN (alpha)	959988		0.22	374.9620582	0.056	89	95.44488755
ENDOSULFAN (beta)	33213659		0.22	374.9620582	0.056	89	95.44488755
ENDOSULFAN (sulfate)	1031078			No Criteria		89	151689.1963
ENDRIN	72208		0.086	146.5760773	0.036	0.06	61.35742771
ENDRIN ALDEHYDE	7421934			No Criteria		0.3	511.3118976
HEPTACHLOR	76448		0.52	886.2739558	0.0038	0.00079	1.346454664
HEPTACHLOR EPOXIDE	1024573		0.52	886.2739558	0.0038	0.00039	0.664705467
POLYCHLORINATED BIPHENYLS3	1336363			No Criteria	0.014	0.00064	1.090798715
2,3,7,8TCDD (Dioxin)	1746016			No Criteria		0.000000051	8.6923E-05
TOXAPHENE	8001352		0.73	1244.192284	0.0002	0.0028	0.340874598
TRIBUTYLTIN			0.46	784.0115763	0.072		122.7148554

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Arkwright Advanced Coating RIPDES PERMIT #: RI0000035

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
NON PRIORITY POLLUTANTS							
OTHER SUBSTANCES							
ALUMINUM (limits are total recoverable)	7429905	NA	750	1278279.744	87		148280.4503
AMMONIA as N(winter/summer)	7664417		10.1 | 10.1	2E+07 | 2E+07	1.46 | 1.46		2488385|2488385
4BROMOPHENYL PHENYL ETHER			18	30678.71386	0.4		681.7491968
CHLORIDE	16887006		860000	1465760773	230000		392005788.2
CHLORINE	7782505		19	40478.85856	11		23435.12864
4CHLORO2METHYLPHENOL			15	25565.59488	0.32		545.3993574
1CHLORONAPHTHALENE			80	136349.8394	1.8		3067.871386
4CHLOROPHENOL	106489		192	327239.6145	4.3		7328.803866
2,4DICHLORO6METHYLPHENOL			22	37496.20582	0.48		818.0990362
1,1DICHLOROPROPANE			1150	1960028.941	26		44313.69779
1,3DICHLOROPROPANE	142289		303	516425.0166	6.7		11419.29905
2,3DINITROTOLUENE			17	28974.34086	0.37		630.618007
2,4DINITRO6METHYL PHENOL			12	20452.4759	0.26		443.1369779
IRON	7439896			No Criteria	1000		1704372.992
pentachlorobenzene	608935		13	22156.8489	0.28		477.2244378
PENTACHLOROETHANE			362	616983.0231	8		13634.98394
1,2,3,5tetrachlorobenzene			321	547103.7304	7.1		12101.04824
1,1,1,2TETRACHLOROETHANE	630206		980	1670285.532	22		37496.20582
2,3,4,6TETRACHLOROPHENOL	58902		7	11930.61094	0.16		272.6996787
2,3,5,6TETRACHLOROPHENOL			8.5	14487.17043	0.19		323.8308685
2,4,5TRICHLOROPHENOL	95954		23	39200.57882	0.51		869.2302259
2,4,6TRINITROPHENOL	88062		4235	7218019.621	94		160211.0612
XYLENE	1330207		133	226681.6079	3		5113.118976

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Arkwright Advanced Coating RIPDES PERMIT #: RI0000035

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:			
TOXIC METALS AND CYANIDE			
ANTIMONY	7440360	766967.85	17043.73
ARSENIC, TOTAL	7440382	579486.82	2386.12
ASBESTOS	1332214	No Criteria	0.00000
BERYLLIUM	7440417	12782.80	289.74
CADMIUM, TOTAL	7440439	888.26	165.14398
CHROMIUM III, TOTAL	16065831	987381.61	47193.52
CHROMIUM VI, TOTAL	18540299	27769.82	19488.67
COPPER, TOTAL	7440508	6462.54	4863.35
CYANIDE	57125	37496.21	8862.74
LEAD, TOTAL	7439921	23827.16	928.51
MERCURY, TOTAL	7439976	2807.20	300.77
NICKEL, TOTAL	7440020	247489.03	27515.96
SELENIUM, TOTAL	7782492	34087.46	8521.86
SILVER, TOTAL	7440224	637.41	No Criteria
THALLIUM	7440280	78401.16	801.06
ZINC, TOTAL	7440666	63089.27	63089.27
VOLATILE ORGANIC COMPOUNDS			
ACROLEIN	107028	4942.68	102.26238
ACRYLONITRILE	107131	644252.99	4260.93
BENZENE	71432	451658.84	10055.80
BROMOFORM	75252	2496906.43	56244.31
CARBON TETRACHLORIDE	56235	2326469.13	27269.97
CHLOROBENZENE	108907	1354976.53	30678.71
CHLORODIBROMOMETHANE	124481	No Criteria	221568.49
CHLOROFORM	67663	2462818.97	54539.94
DICHLOROBROMOMETHANE	75274	No Criteria	289743.41
1,2DICHLOROETHANE	107062	10055800.65	223272.86
1,1DICHLOROETHYLENE	75354	988536.34	22156.85
1,2DICHLOROPROPANE	78875	4473979.10	98853.63
1,3DICHLOROPROPYLENE	542756	No Criteria	35791.83
ETHYLBENZENE	100414	2726996.79	61357.43
BROMOMETHANE (methyl bromide)	74839	No Criteria	2556559.49
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.00000
METHYLENE CHLORIDE	75092	16447199.37	364735.82
1,1,2,2TETRACHLOROETHANE	79345	794237.81	17043.73
TETRACHLOROETHYLENE	127184	409049.52	9033.18
TOLUENE	108883	1082276.85	23861.22
1,2TRANSDICHLOROETHYLENE	156605	No Criteria	17043729.92
1,1,1TRICHLOROETHANE	71556	No Criteria	0.00000
1,1,2TRICHLOROETHANE	79005	1533935.69	34087.46
TRICHLOROETHYLENE	79016	3323527.33	73288.04
VINYL CHLORIDE	75014	No Criteria	4090.50
ACID ORGANIC COMPOUNDS			
2CHLOROPHENOL	95578	219864.12	4942.68
2,4DICHLOROPHENOL	120832	172141.67	3749.62
2,4DIMETHYLPHENOL	105679	180663.54	4090.50
4,6DINITRO2METHYL PHENOL	534521	No Criteria	477224.44
2,4DINITROPHENOL	51285	52835.56	1176.02
4NITROPHENOL	88755	No Criteria	0.00000
PENTACHLOROPHENOL	87865	99.18	76.09101
PHENOL	108952	427797.62	9544.49
2,4,6TRICHLOROPHENOL	88062	27269.97	613.57
BASE NEUTRAL COMPUNDS			
ACENAPHTHENE	83329	144871.70	3238.31
ANTHRACENE	120127	No Criteria	68174919.68
BENZIDINE	92875	No Criteria	3.40875
PAHs		No Criteria	306.79
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	9033.18
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	110784244.48
BIS(2ETHYLHEXYL)PHTHALATE	117817	945927.01	20452.48
BUTYL BENZYL PHTHALATE	85687	144871.70	3238.31
2CHLORONAPHTHALENE	91587	No Criteria	2726996.79
1,2DICHLOROBENZENE	95501	134645.47	3067.87
1,3DICHLOROBENZENE	541731	664705.47	14828.05
1,4DICHLOROBENZENE	106467	95444.89	2045.25
3,3DICHLOROBENZIDENE	91941	No Criteria	477.22
DIETHYL PHTHALATE	84662	4439891.64	98853.63
DIMETHYL PHTHALATE	131113	2812215.44	63061.80
DI-n-BUTYL PHTHALATE	84742	No Criteria	7669678.46
2,4DINITROTOLUENE	121142	2641778.14	57948.68
1,2DIPHENYLHYDRAZINE	122667	23861.22	528.36
FLUORANTHENE	206440	339170.23	7499.24

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Arkwright Advanced Coating RIPDES PERMIT #: RI0000035

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
FLUORENE	86737	No Criteria	9033176.86
HEXACHLOROBENZENE	118741	No Criteria	4.94268
HEXACHLOROBUTADIENE	87683	No Criteria	306787.14
HEXACHLOROCYCLOPENTADIENE	77474	596.53	13.63498
HEXACHLOROETHANE	67721	83514.28	1874.81
ISOPHORONE	78591	9970582.00	221568.49
NAPHTHALENE	91203	196002.89	4431.37
NITROBENZENE	98953	2300903.54	51131.19
N-NITROSODIMETHYLAMINE	62759	No Criteria	51131.19
N-NITROSODI-N-PROPYLAMINE	621647	No Criteria	8692.30
N-NITROSODIPHENYLAMINE	86306	499381.29	11078.42
PYRENE	129000	No Criteria	6817491.97
1,2,4trichlorobenzene	120821	127827.97	2897.43
PESTICIDES/PCBs			
ALDRIN	309002	5113.12	0.85219
Alpha BHC	319846	No Criteria	83.51
Beta BHC	319857	No Criteria	289.74
Gamma BHC (Lindane)	58899	1619.15	1619.15
CHLORDANE	57749	4090.50	7.32880
4,4DDT	50293	1874.81	1.70437
4,4DDE	72559	No Criteria	3.74962
4,4DDD	72548	No Criteria	5.28356
DIELDRIN	60571	409.05	0.92036
ENDOSULFAN (alpha)	959988	374.96	95.44489
ENDOSULFAN (beta)	33213659	374.96	95.44489
ENDOSULFAN (sulfate)	1031078	No Criteria	151689.20
ENDRIN	72208	146.58	61.36
ENDRIN ALDEHYDE	7421934	No Criteria	511.31
HEPTACHLOR	76448	886.27	1.35
HEPTACHLOR EPOXIDE	1024573	886.27	0.66
POLYCHLORINATED BIPHENYLS3	1336363	No Criteria	1.09
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00
TOXAPHENE	8001352	1244.19	0.34
TRIBUTYLTIN		784.01	122.71

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
NON PRIORITY POLLUTANTS			
OTHER SUBSTANCES			
ALUMINUM, TOTAL	7429905	1278279.74	148280.45
AMMONIA (as N), WINTER (NOV-AP	7664417	17214167.22	2488384.57
AMMONIA (as N), SUMMER (MAY-O	7664417	17214167.22	2488384.57
4BROMOPHENYL PHENYL ETHER		30678.71	681.75
CHLORIDE	16887006	1465760773.12	392005788.16
CHLORINE	7782505	40478.86	23435.13
4CHLORO2METHYLPHENOL		25565.59	545.40
1CHLORONAPHTHALENE		136349.84	3067.87
4CHLOROPHENOL	106489	327239.61	7328.80
2,4DICHLORO6METHYLPHENOL		37496.21	818.10
1,1DICHLOROPROPANE		1960028.94	44313.70
1,3DICHLOROPROPANE	142289	516425.02	11419.30
2,3DINITROTOLUENE		28974.34	630.62
2,4DINITRO6METHYL PHENOL		20452.48	443.14
IRON	7439896	No Criteria	1704372.99
pentachlorobenzene	608935	22156.85	477.22
PENTACHLOROETHANE		616983.02	13634.98
1,2,3,5tetrachlorobenzene		547103.73	12101.05
1,1,1,2TETRACHLOROETHANE	630206	1670285.53	37496.21
2,3,4,6TETRACHLOROPHENOL	58902	11930.61	272.70
2,3,5,6TETRACHLOROPHENOL		14487.17	323.83
2,4,5TRICHLOROPHENOL	95954	39200.58	869.23
2,4,6TRINITROPHENOL	88062	7218019.62	160211.06
XYLENE	1330207	226681.61	5113.12

ATTACHMENT D

Flow:

Receiving Water – Pawtuxet River 7Q10 @ Arkwright Dam = 12.7 MGD
Outfalls 100, 200, and 013 - Daily Maximum Limit = (3,000 GPD + 3,000 GPD + 31,500 GPD) or 0.0375 MGD.

Temperature:

Outfall 013 – Proposed Temperature Limit = 212 °F
Instream Temperature - Summer = 72 °F
Instream Temperature - Winter = 36 °F

Water Quality Limits:

Net Instream Temperature Change - Winter = 4.0 °F
Net Instream Temperature Change - Summer = 4.0 °F

Mass Balance:

$$Q_{max}(T_{limit}) + Q_{7Q10}(T_{instream}) = (Q_{max} + Q_{7Q10})(T_{instream} + \Delta T)$$

Where:
Q_{max} = Daily Maximum Limit @ Outfall 001A
Q_{7Q10} = Low Flow for Pawtuxet River @ Arkwright Dam
T_{limit} = Proposed Permit Limit for Temperature
$T_{instream}$ = Instream Ambient Temperature
ΔT = Net Change in Temperature

Case 1 - Summer Months

$(0.0375\ MGD)(212^{\circ}F) + (12.7\ MGD)(72\ ^{\circ}F) = (0.0375\ MGD + 12.7\ MGD)(72\ ^{\circ}F + \Delta T)$

$\Delta T = 0.41\ ^{\circ}F \leq 4.0\ ^{\circ}F$ - *Proposed limit increase meets Water Quality Regulations.*

Case 2 - Winter Months

$(0.0375\ MGD)(212\ ^{\circ}F) + (12.7\ MGD)(36\ ^{\circ}F) = (0.0375\ MGD + 12.7\ MGD)(36\ ^{\circ}F + \Delta T)$

$\Delta T = 0.52\ ^{\circ}F \leq 4.0\ ^{\circ}F$ - *Proposed limit increase meets Water Quality Regulations.*

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
One Capitol Hill
Second Floor
Providence, RI 02903

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.