NPDES PERMIT MODIFICATION

issued to

Allnex USA Inc.
South Cherry Street
Wallingford, Connecticut 06492

Location Address:

528 South Cherry Street
Wallingford, Connecticut 06492

Facility ID: 148-017

Permit ID: CT0000086

Receiving Water: Quinnipiac River
Unnamed tributary to Quinnipiac River

Permit Modification Expires: **May 16, 2016**

Water Body Segment ID: Quinnipiac River basin segment: CT5200-00_02

SECTION 1: GENERAL PROVISIONS

(A) This permit modification is issued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and section 402(b) of the Clean Water Act, as amended, 33 USC 1251, *et. seq.*, and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer an NPDES permit program.

(B) **ALLNEX USA INC.** ("Permittee") shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsections (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (*l*)(2) of section 22a-430-3.

Section 22a-430-3: *General Conditions*

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(*l*) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4: *Procedures and Criteria*

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(*l*) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements for Metals and Cyanide
(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Energy and Environmental Protection ("Commissioner"). To request such approval, the Permittee and proposed Transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the Transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the Transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the Transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the Regulations of Connecticut State Agencies.

(I) Evonik Cyro LLC ("Cyro"), a thermoplastic resin manufacturer, also operates at the site. Cyro discharges its wastewaters into the Permittee's wastewater collection/treatment system. This permit shall authorize the discharge of Cyro's wastestreams, as identified in the Tables in Section 5 of this permit. The Permittee shall take full and complete responsibility for Cyro's discharges.

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA, except for "No Observable Acute Effect Level" (NOAEL) which is redefined below.

(B) In addition to the above, the following definitions shall apply to this permit:

"---" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the DMR.

"40 CFR" means Title 40 of the Code of Federal Regulations.

"Annual" in the context of any sampling frequency found in Section 5, shall mean the sample must be collected in the month of August.

"Average Monthly Limit" means the maximum allowable "Average Monthly Concentration" as defined in section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g., mg/l). Otherwise, it means "Average Monthly Discharge Limitation" as defined in section 22a-430-3(a) of the RCSA.

"Chronic–No Observed Effect Concentration" ("C-NOEC") means the highest concentration of effluent to which organisms are exposed in a life cycle or a partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specified time of observation as determined from hypothesis testing where the results exhibit a linear dose-response relationship.

"Critical Test Concentration" ("CTC") means the specified effluent dilution at which the Permittee is to conduct a single-concentration Aquatic Toxicity test.

"Daily Concentration" means the concentration of a substance as measured in a daily composite sample, or the arithmetic average of all grab sample results defining a grab sample average.

"Daily Quantity" means the quantity of waste discharged during an operating day.

"IC" means "Inhibition Concentration".

"IC_{25}" means a point estimate of the toxicant concentration that would cause a 25% reduction in a non-lethal biological measurement of the test organism, such as reproduction or growth.

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"LC" means "Lethal Concentration"

"LC_{50}" means the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.

"Lowest Observed Effect Concentration" ("LOEC") means the lowest concentration of an effluent or toxicant that results in adverse effects on the test organisms.

"Instream Waste Concentration" ("IWC") means the discharge flow divided by the sum of the discharge flow plus the 7Q10 flow allocation.

"Maximum Daily Limit" means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g., mg/l). Otherwise, it means the maximum allowable "Daily Quantity" as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity, it means "Maximum Daily Flow" as defined in section 22a-430-3(a) of the RCSA.
"NA" as a Monitoring Table abbreviation means "Not Applicable".

"NR" as a Monitoring Table abbreviation means "Not Required".

"No Observable Acute Effect Level" ("NOAEL" or "A-NOEC") means any concentration equal to or less than the CTC in a single concentration (pass/fail) toxicity test conducted pursuant to section 22a-430-3(j)(7)(A)(i) RCSA demonstrating 90% or greater survival of test organisms at the CTC.

"No Observed Effect Concentration" ("NOEC") means the highest tested concentration of an effluent or toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation.

"Quarterly" in the context of a sampling frequency means sampling is required in the months of February, May, August, and November.

"Range During Month" ("RDM"), as a sample type, means the lowest and the highest values of all of the monitoring data for the reporting month.

"Range During Sampling" ("RDS"), as a sample type, means the maximum and minimum of all values recorded as a result of analyzing each grab sample of: 1) a Composite Sample, or, 2) a Grab Sample Average. For those Permittees with continuous monitoring and recording pH meters, "Range During Sampling" means the maximum and minimum readings recorded with a continuous monitoring device during the "Composite" or "Grab Sample Average" sample collection.

"Semi-Annual" in the context of a sampling frequency, means sampling is required in the months of May and August.

"Twice per Month" when used as a sample frequency shall mean two samples per calendar month collected no less than 12 days apart.

SECTION 3: COMMISSIONER'S DECISION

(A) On May 17, 2011, the Commissioner issued a final determination on Application 200203786 and found that: 1) with respect to DSN 001-1, continuance of the existing system to treat the discharge will protect the waters of the state from pollution; and 2) with respect to DSN 002-1 such discharge will not cause pollution of the waters of the state. The Commissioner's decision was based Application 200203786 for permit reissuance received on October 2, 2002 and the administrative record established in the processing of that application. The Commissioner authorized the Permittee to discharge in accordance with the provisions of the permit, the referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

(B) In addition, the Commissioner has issued a final determination on Application 201504233 and found that with respect to DSN 001-1, continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's decision is based Application 201504233 for permit modification received on June 10, 2015 and the administrative record established in the processing of that application.

(C) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced applications, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

(D) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

(E) This permit modification takes effect on the first day of the month following the issuance date identified on the signature page of this permit.

SECTION 4: GENERAL EFFLUENT LIMITATIONS

(A) No discharge shall contain, or cause in the receiving water, a visible oil sheen or floating solids or cause visible discoloration or foaming in the receiving water.

(B) No discharge shall cause acute or chronic toxicity in the receiving water beyond any zone of influence specifically allocated to that discharge in this permit.

(C) The temperature of any discharge shall not increase the temperature in the receiving water above 85 ^{o}F, or in any case, raise the normal temperature of the receiving water more than 4 ^{o}F.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharges shall not exceed and shall otherwise conform to the specific terms and conditions listed in the following tables. The discharges are restricted by, and shall be monitored in accordance with the following tables.

(B) All samples shall be comprised of only the wastewater described in these tables. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. All samples collected shall be representative of the discharge during standard operating conditions.

(C) In cases where limits and sample type are specified but sampling is not required by this permit, the limits specified shall apply to all samples which may be collected and analyzed by the Department of Energy and Environmental Protection ("Department") personnel, the Permittee, or other parties.

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
Acute Aquatic Toxicity, *Pimephales promelas*	%	NA	LC_{50}≥100%	Quarterly	Daily Composite	LC_{50}≥33%	NR	Grab		
Acute Aquatic Toxicity, *Ceriodaphnia dubia*	%	NA	LC_{50}≥100%	Quarterly	Daily Composite	LC_{50}≥33%	NR	Grab		
Chronic Aquatic Toxicity, *Pimephales promelas*	%	NA	C-NOEC≥26%	Quarterly	Daily Composite	NA	NR	NA		
Chronic Aquatic Toxicity, *Ceriodaphnia dubia*	%	NA	C-NOEC≥26%	Quarterly	Daily Composite	NA	NR	NA		
Acenaphthene	µg/l	6.1	8.9	Annually	Daily Composite	13.3	NR	Grab	5	
Acenaphthene	g/d	53	77	Annually	Daily Composite	NA	NR	NA		
Acenaphthylene	µg/l	9[4]	24	Annually	Daily Composite	36	NR	Grab	10	
Acenaphthylene	g/d	79	211	Annually	Daily Composite	NA	NR	NA		
Acrylonitrile	µg/l	0.25[4]	0.36[4]	Monthly	Grab Sample Average	0.55	NR	Grab	1	✔
Acrylonitrile	g/d	2.2	3.2	Monthly	Grab Sample Average	NA	NR	NA		
Anthracene	µg/l	4.92[4]	7.18	Annually	Daily Composite	10.77	NR	Grab	5	
Anthracene	g/d	43	62	Annually	Daily Composite	NA	NR	NA		
Benzene	µg/l	15	56	Monthly	Grab Sample Average	84	NR	Grab	1	✔
Benzene	g/d	132	486	Monthly	Grab Sample Average	NA	NR	NA		
Benzo(a)anthracene	µg/l	0.018[4]	0.026[4]	Annually	Daily Composite	0.039[4]	NR	Grab	10	
Benzo(a)anthracene	g/d	0.16	0.23	Annually	Daily Composite	NA	NR	NA		
3,4-Benzofluoranthene	µg/l	0.018[4]	0.026[4]	Annually	Daily Composite	0.039[4]	NR	Grab	5	
3,4-Benzofluoranthene	g/d	0.16	0.23	Annually	Daily Composite	NA	NR	NA		
Benzo(k)fluoranthene	µg/l	0.018[4]	0.026[4]	Annually	Daily Composite	0.039[4]	NR	Grab	10	
Benzo(k)fluoranthene	g/d	0.16	0.23	Annually	Daily Composite	NA	NR	NA		
Benzo(a)pyrene	µg/l	0.018[4]	0.026[4]	Annually	Daily Composite	0.039[4]	Grab	Grab	10	

Table A

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Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantane-ous limit or required range	Sample/ Reporting Frequency	Sample Type or measure-ment to be reported		
Benzo(a)pyrene	g/d	0.16	0.23	Annually	Daily Composite	NA	NR	NA		
Bis(2-ethylhexyl)phthalate	µg/l	2.2[4]	4.4[4]	Weekly	Daily Composite	6.6	NR	Grab	5	✔
Bis(2-ethylhexyl)phthalate	g/d	19	38	Weekly	Daily Composite	NA	NR	NA		
Carbon tetrachloride	µg/l	1.6[4]	2.3[4]	Annually	Grab Sample Average	3.5[4]	NR	Grab	10	
Carbon tetrachloride	g/d	14	20	Annually	Grab Sample Average	NA	NR	NA		
Chlorobenzene	µg/l	6	11	Monthly	Grab Sample Average	17	NR	Grab	1	✔
Chlorobenzene	g/d	54	100	Monthly	Grab Sample Average	NA	NR	NA		
Chloroethane	µg/l	43[4]	110	Monthly	Grab Sample Average	165	NR	Grab	50	✔
Chloroethane	g/d	372	958	Monthly	Grab Sample Average	NA	NR	NA		
Chloroform	µg/l	9[4]	19	Monthly	Grab Sample Average	28	NR	Grab	10	✔
Chloroform	g/d	75	164	Monthly	Grab Sample Average	NA	NR	NA		
2-Chlorophenol	µg/l	13	40	Annually	Daily Composite	60	NR	Grab	10	
2-Chlorophenol	g/d	111	350	Annually	Daily Composite	NA	NR	NA		
Chrysene	µg/l	0.018[4]	0.026[4]	Annually	Daily Composite	0.039[4]	NR	Grab	5	
Chrysene	g/d	0.16	0.23	Annually	Daily Composite	NA	NR	NA		
Di-n-butyl phthalate	µg/l	11	23	Annually	Daily Composite	35	NR	Grab	10	
Di-n-butyl phthalate	g/d	97	204	Annually	Daily Composite	NA	NR	NA		
1,2-Dichlorobenzene	µg/l	32	67	Annually	Grab Sample Average	100	NR	Grab	10	
1,2-Dichlorobenzene	g/d	275	583	Annually	Grab Sample Average	NA	NR	NA		
1,3-Dichlorobenzene	µg/l	13	18	Annually	Grab Sample Average	27	NR	Grab	10	
1,3-Dichlorobenzene	g/d	111	157	Annually	Grab Sample Average	NA	NR	NA		

Table A

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Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantane-ous limit or required range	Sample/ Reporting Frequency	Sample Type or measure-ment to be reported		
1,4-Dichlorobenzene	µg/l	6[4]	11	Annually	Grab Sample Average	17	NR	Grab	10	
1,4-Dichlorobenzene	g/d	54	100	Annually	Grab Sample Average	NA	NR	NA		
1,1-Dichloroethane	µg/l	9[4]	24	Annually	Grab Sample Average	36	NR	Grab	10	
1,1-Dichloroethane	g/d	79	211	Annually	Grab Sample Average	NA	NR	NA		
1,2-Dichloroethane	µg/l	28	54	Annually	Grab Sample Average	81	NR	Grab	10	
1,2-Dichloroethane	g/d	243	470	Annually	Grab Sample Average	NA	NR	NA		
1,1-Dichloroethylene	µg/l	3.2[4]	4.7[4]	Annually	Grab Sample Average	7.0[4]	NR	Grab	10	
1,1-Dichloroethylene	g/d	28	41	Annually	Grab Sample Average	NA	NR	NA		
1,2-trans-Dichloroethylene	µg/l	9[4]	22	Annually	Grab Sample Average	33	NR	Grab	10	
1,2-trans-Dichloroethylene	g/d	75	193	Annually	Grab Sample Average	NA	NR	NA		
2,4-Dichlorophenol	µg/l	16	46	Annually	Daily Composite	69	NR	Grab	10	
2,4-Dichlorophenol	g/d	139	400	Annually	Daily Composite	NA	NR	NA		
1,2-Dichloropropane	µg/l	57	83	Annually	Grab Sample Average	125	NR	Grab	10	
1,2-Dichloropropane	g/d	496	724	Annually	Grab Sample Average	NA	NR	NA		
1,3-Dichloropropylene	µg/l	12	18	Annually	Grab Sample Average	27	NR	Grab	1	
1,3-Dichloropropylene	g/d	104	157	Annually	Grab Sample Average	NA	NR	NA		
Diethyl phthalate	µg/l	33	83	Annually	Daily Composite	125	NR	Grab	10	
Diethyl phthalate	g/d	290	726	Annually	Daily Composite	NA	NR	NA		
2,4-Dimethylphenol	µg/l	7[4]	15	Annually	Daily Composite	22	NR	Grab	10	
2,4-Dimethylphenol	g/d	64	129	Annually	Daily Composite	NA	NR	NA		
Dimethyl phthalate	µg/l	8[4]	19	Monthly	Daily Composite	29	NR	Grab	10	✔

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
Dimethyl phthalate	g/d	68	168	Monthly	Daily Composite	NA	NR	NA		
4,6-Dinitro-o-cresol	µg/l	32[4]	114	Annually	Daily Composite	171	NR	Grab	50	
4,6-Dinitro-o-cresol	g/d	279	990	Annually	Daily Composite	NA	NR	NA		
2,4-Dinitrophenol	µg/l	29[4]	51	Annually	Daily Composite	76	NR	Grab	50	
2,4-Dinitrophenol	g/d	254	440	Annually	Daily Composite	NA	NR	NA		
2,4-Dinitrotoluene	µg/l	3.4[4]	5.0[4]	Annually	Daily Composite	7.4[4]	NR	Grab	10	
2,4-Dinitrotoluene	g/d	30	43	Annually	Daily Composite	NA	NR	NA		
2,6-Dinitrotoluene	µg/l	105	263	Annually	Daily Composite	395	NR	Grab	10	
2,6-Dinitrotoluene	g/d	912	2292	Annually	Daily Composite	NA	NR	NA		
Ethylbenzene	µg/l	13	44	Monthly	Grab Sample Average	67	NR	Grab	1	✔
Ethylbenzene	g/d	114	386	Monthly	Grab Sample Average	NA	NR	NA		
Fluoranthene	µg/l	1.28[4]	1.87[4]	Annually	Daily Composite	2.80[4]	NR	Grab	10	
Fluoranthene	g/d	11	16	Annually	Daily Composite	NA	NR	NA		
Fluorene	µg/l	9[4]	24	Annually	Daily Composite	36	NR	Grab	10	
Fluorene	g/d	79	211	Annually	Daily Composite	NA	NR	NA		
Hexachlorobenzene	µg/l	0.00029[4]	0.00042[4]	Annually	Daily Composite	0.00063[4]	NR	Grab	5	
Hexachlorobenzene	g/d	0.003	0.004	Annually	Daily Composite	NA	NR	NA		
Hexachlorobutadiene	µg/l	8[4]	20	Annually	Daily Composite	30	NR	Grab	10	
Hexachlorobutadiene	g/d	71	175	Annually	Daily Composite	NA	NR	NA		
Hexachloroethane	µg/l	3.3[4]	4.8[4]	Annually	Daily Composite	7.2	NR	Grab	5	
Hexachloroethane	g/d	29	42	Annually	Daily Composite	NA	NR	NA		

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantane-ous limit or required range	Sample/ Reporting Frequency	Sample Type or measure-ment to be reported		
Methyl chloride	µg/l	35[4]	78	Annually	Grab Sample Average	117	NR	Grab	50	
Methyl chloride	g/d	307	679	Annually	Grab Sample Average	NA	NR	NA		
Methylene chloride	µg/l	16[4]	37	Monthly	Grab Sample Average	55	NR	Grab	20	✔
Methylene chloride	g/d	143	318	Monthly	Grab Sample Average	NA	NR	NA		
Naphthalene	µg/l	9[4]	24	Monthly	Daily Composite	36	NR	Grab	10	✔
Naphthalene	g/d	79	211	Monthly	Daily Composite	NA	NR	NA		
Nitrobenzene	µg/l	11	28	Annually	Daily Composite	42	NR	Grab	10	
Nitrobenzene	g/d	97	243	Annually	Daily Composite	NA	NR	NA		
2-Nitrophenol	µg/l	17[4]	28	Annually	Daily Composite	43	NR	Grab	20	
2-Nitrophenol	g/d	147	247	Annually	Daily Composite	NA	NR	NA		
4-Nitrophenol	µg/l	30[4]	51	Annually	Daily Composite	76	NR	Grab	50	
4-Nitrophenol	g/d	257	443	Annually	Daily Composite	NA	NR	NA		
Phenanthrene	µg/l	9[4]	24	Annually	Daily Composite	36	NR	Grab	10	
Phenanthrene	g/d	79	211	Annually	Daily Composite	NA	NR	NA		
Phenol	µg/l	6[4]	11	Monthly	Daily Composite	16	NR	Grab	10	✔
Phenol	g/d	54	93	Monthly	Daily Composite	NA	NR	NA		
Pyrene	µg/l	10	28	Annually	Daily Composite	41	NR	Grab	5	
Pyrene	g/d	89	240	Annually	Daily Composite	NA	NR	NA		
Tetrachloroethylene	µg/l	9[4]	18	Monthly	Grab Sample Average	27	NR	Grab	10	✔
Tetrachloroethylene	g/d	79	159	Monthly	Grab Sample Average	NA	NR	NA		
Toluene	µg/l	11	33	Monthly	Grab Sample Average	49	NR	Grab	1	✔

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
Toluene	g/d	93	286	Monthly	Grab Sample Average	NA	NR	NA		
Total Chromium	µg/l	131	262	Monthly	Daily Composite	393	NR	Grab	5	✔
Total Chromium	g/d	1,138	2,282	Monthly	Daily Composite	NA	NR	NA		
Total Copper	µg/l	48.7	97.7	Monthly	Daily Composite	146	NR	Grab	4	✔
Total Copper	g/d	424	850	Monthly	Daily Composite	NA	NR	NA		
Total Cyanide	µg/l	15	32.5	Monthly	Grab Sample Average	48.7	NR	Grab	5	✔
Total Cyanide	g/d	130	283	Monthly	Grab Sample Average	NA	NR	NA		
Total Lead	µg/l	3.7	7.5	Monthly	Daily Composite	11	NR	Grab	TBD	✔
Total Lead	g/d	33	65	Monthly	Daily Composite	NA	NR	NA		
Total Nickel	µg/l	90	180	Monthly	Daily Composite	271	NR	Grab	5	✔
Total Nickel	g/d	783	1,571	Monthly	Daily Composite	NA	NR	NA		
Total Zinc	µg/l	123	247	Weekly	Daily Composite	371	NR	Grab	20	✔
Total Zinc	g/d	1,072	2,150	Weekly	Daily Composite	NA	NR	NA		
1,2,4-Trichlorobenzene	µg/l	28	57	Annually	Daily Composite	86	NR	Grab	10	
1,2,4-Trichlorobenzene	g/d	243	500	Annually	Daily Composite	NA	NR	NA		
1,1,1-Trichloroethane	µg/l	9[4]	22	Monthly	Grab Sample Average	33	NR	Grab	10	✔
1,1,1-Trichloroethane	g/d	75	193	Monthly	Grab Sample Average	NA	NR	NA		
1,1,2-Trichloroethane	µg/l	9[4]	22	Annually	Grab Sample Average	33	NR	Grab	10	
1,1,2-Trichloroethane	g/d	75	193	Annually	Grab Sample Average	NA	NR	NA		
Trichloroethylene	µg/l	9[4]	22	Monthly	Grab Sample Average	33	Grab	Grab	10	✔
Trichloroethylene	g/d	75	193	Monthly	Grab Sample Average	NA	NR	NA		

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
Vinyl chloride	µg/l	2.4[4]	3.5[4]	Annually	Grab Sample Average	5.3[4]	Grab	Grab	10	
Vinyl chloride	g/d	21	30	Annually	Grab Sample Average	NA	NR	NA		
Acetone	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	TBD	✔
Acrylamide[7]	mg/l	TBD	TBD	Weekly	Grab Sample Average	TBD	NR	Grab	0.005	✔
Alkalinity (as $CaCO_3$)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Aluminum, Total	mg/l	0.271	0.543	Monthly	Daily Composite	0.815	NR	Grab		✔
Ammonia (as N)	mg/l	2.33	9.66	Three per week	Daily Composite	14.5	NR	Grab		✔
Barium, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Benzoic Acid	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Biochemical Oxygen Demand (BOD_5)	mg/l	25	50	Three per week	Daily Composite	75	NR	Grab		✔
Biochemical Oxygen Demand (BOD_5)	kg/d	222	435	Three per week	Daily Composite	NA	NR	NA		
Bisphenol A	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Boron, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Butanol	mg/l	---	---	Weekly	Daily Composite	NA	NR	NA	0.5	✔
Butyl acetate	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	10	✔
Chemical Oxygen Demand	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Chemical Oxygen Demand	kg/d	---	---	Three per week	Daily Composite	NA	NR	NA		
Chlorine, Total Residual [See Remark 4]	µg/l	34	69	Weekly	GSA, Modified	103	NR	Grab	TBD	✔
Cresol, ortho	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Cresol, meta	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Cresol, para	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Diethyl amine	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA		✔

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
Dimethyl amine	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA		✔
Di-N-Octyl phthalate	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	5	✔
Epichlorohydrin	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	10	✔
Escherichia coli	cfus/ 100 ml	NA	NA	NR	NA	See Note 5	Weekly	Grab		✔
Ethanol	mg/l	---	---	Weekly	Daily Composite	NA	NR	NA	TBD	✔
Ethyl acrylate	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	10	✔
Ethylene glycol	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	25	✔
Flow rate (Average daily)[1]	gpd	2,298,333	NA	Continuous	Daily flow	NA	NR	NA		
Flow, Maximum during 24 hour period[1]	gpd	NA	4,367,030	Continuous	Daily flow	NA	NR	NA		
Flow (Total, Day of Sampling)	gpd	---	4,367,030	Three per week	Daily flow	NA	NR	NA		
Formaldehyde	mg/l	0.703	1.77	Weekly	Daily Composite	2.66	NR	Grab	0.05	✔
Furfural	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA		✔
Iron, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Isobutanol	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	0.5	✔
Isophorone	mg/l	3.65	5.32	Monthly	Daily Composite	7.98	NR	Grab	0.005	✔
Isopropanol	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Isopropylamine	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA		✔
Kjeldahl Nitrogen, Total (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Magnesium, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Methanol	mg/l	---	---	Weekly	Daily Composite	NA	NR	NA	TBD	✔
Methyl acrylate	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	0.001	✔

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
Methyl ethyl ketone	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	TBD	✔
Methyl methacrylate	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	0.001	✔
Nitrate (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Nitrite (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Nitrogen, Total[6]	lbs/day	928	---	Three per week	Daily Composite	NA	NR	NA		
Nitrogen, Total[6]	lbs/year	---	NA	See Note 6	Daily Composite	NA	NR	NA		
Nonylphenol	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Oil & Grease, Total	mg/l	---	15	Monthly	Grab Sample Average	NA	NR	NA		✔
Organic Nitrogen (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Orthophosphate (as P)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Oxygen, Dissolved	mg/l	NA	NA	NR	NA	---	Weekly	Grab		✔
PCBs (Polychlorinated Biphenyls as Aroclors)	ng/l	0.064[4]	0.093[4]	Monthly	Daily Composite	0.14[4]	NR	Grab	500	✔
pH, Minimum	SU	NA	NA	NR	NA	6.0	Continuous	Min		
pH, Maximum	SU	NA	NA	NR	NA	9.0	Continuous	Max		
pH, Day of Sampling	SU	NA	NA	NR	NA	6.0-9.0	Three/week	RDS		✔
Phosphorus, Total (Phase 1) [See Remark 5]	mg/l	1.0	---	Three per week	Daily Composite	NA	NR	NA		✔
Phosphorus, Total (Phase 1) [See Remark 5]	lbs/day	19.2	---	Three per week	Daily Composite	NA	NR	NA		
Phosphorus, Total (Phase 2) [See Remark 5]	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA		✔
Phosphorus, Total (Phase 2) [See Remark 5]	lbs/day	1.4	---	Three per week	Daily Composite	NA	NR	NA		
Propylene glycol	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	TBD	✔
Silver, Total	µg/l	1.93	3.88	Monthly	Daily Composite	5.81	NR	Grab	TBD	✔
Styrene	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	1	✔

Table A

Discharge Serial Number**: 001-1** | **Monitoring Location: 1**

Wastewater Description: Building 2 (Boiler blowdown, emergency de-aerator overflow, washwater, water treatment wastewater, laboratory/maintenance wastewater, air compressor condensate/blowdown, eyewash/safety shower test water, air conditioner condensate); **Building 4** (Cooling tower blowdown, air conditioner condensate); **Building 5** (Air conditioner condensate); **Building 5B** (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, water treatment wastewater, eyewash and safety shower test water, air conditioner condensate, foam suppression test water); **Buildings 6/6B/6C**: (Washwater, produced water, decant water, scrubber water, distillation wastewater, steam condensate, seal water, steam jet condensate, steam jet ejector intercooler water, non-contact cooling water, kettle/equipment cleaning wastewater, laboratory wastewater, maintenance wastewater, eyewash and safety shower test water; air conditioner condensate, foam suppression test water); **Building 10** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater); **Building 10A** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Building 15** (Maintenance-related wastewater, vehicle/equipment washwater); **Building 16** (Hydrostatic pressure test water, laboratory wastewater); **Building 27** (Maintenance-related wastewater, eyewash/safety shower test water); **Building 30** (Cooling tower blowdown/maintenance, cooling tower overflow, water treatment wastewater, washwater, maintenance, laboratory wastewater, eye wash/safety shower test water); **Building 31/31A**: (Air compressor condensate); **Building 34** (Eye wash/safety shower test water); **Building 35** (Laboratory wastewater, filtrate, washwater, pump seal water, stormwater); **Building 36** (Pump seal water, washwater); **Building 37** (Washwater); **Building 38** (Maintenance-related wastewater); **Building 40** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Building 45** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Fire Training Pad** (Washwater); **Scrubber water associated with tank storage areas at Building 5B and Building 6**; **Fire suppression test water** (from testing fire hydrants, sprinkler systems, and inspection valves); **Contaminated groundwater (**Treated groundwater from Area 1: Acrylonitrile spill area at Building 10; Groundwater from Area 2: Fuel Oil Spill Area at Building 2; Groundwater from Area 3: Methylformcel spill area near Pad 13; Groundwater from Area 4: Tank Farm release area at Building 5); **Landfill leachate**; **Stormwater; Domestic sewage**

Monitoring Location Description**: Final effluent chamber**

Discharge is to**: Quinnipiac River** | Instream Waste Concentration**: 26%** | Dilution: **3.8:1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantane-ous limit or required range	Sample/ Reporting Frequency	Sample Type or measure-ment to be reported		
tert-Butyl alcohol	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	TBD	✔
Tin, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Titanium, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		✔
Total Suspended Solids	mg/l	30	50	Three per week	Daily Composite	75	NR	Grab		✔
Total Suspended Solids	kg/d	264	435	Three per week	Daily Composite	NA	NR	NA		
Triethylamine	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	25	✔
Xylenes, Total (o,m,p)	µg/l	---	---	Weekly	Grab Sample Average	NA	NR	NA	1	✔

TABLE A FOOTNOTES AND REMARKS

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the total flow for each day and the Average Daily Flow and the Maximum Daily Flow for month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

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TABLE A FOOTNOTES AND REMARKS (CONTINUED)

[3] Minimum Level refers to Section 6(A)(4) of this permit. Where the ML is noted as "TBD", the Permittee shall, within 6 months of issuance of this permit, evaluate the lowest achievable ML for each of the noted parameters by performing an MDL Study (in accordance with 40 CFR 136, Appendix B) and, if necessary, a Matrix Interference Study (in accordance with *Solutions to Analytical Chemistry Problems with Clean Water Act Methods*) and submit a report summarizing the results of this evaluation, including proposed MLs or proposed Matrix-Specific MLs, for the review and written approval of the Commissioner. The permit shall be modified upon determination of the MLs/Matrix-Specific MLs.

[4] The noted permit limit is below the minimum level (ML). Therefore, compliance with this limit will be determined based on the ML. The Permittee shall conduct analysis for this parameter in accordance with an approved method. If the measured value is less than the ML, the results shall be reported in accordance with Section 6(A)(6) and the results will be considered to be in compliance with the permit limit. If the measured value is greater or equal to the ML, the actual results obtained shall be reported on the DMR and these results will be considered a violation of the permit limit.

[5] The effluent shall be monitored for *Escherichia coli* from May 1st through September 30th. The geometric mean of the *Escherichia coli* values for the effluent sample(s) collected in a period of thirty (30) days during the period from May 1st through September 30th shall not exceed a monthly geometric mean of 126 cfus per 100 milliliters, nor shall any sample(s) exceed 400 cfus per 100 milliliters as a daily maximum. Any *Escherichia coli* exceedence will require that the Permittee immediately notify the Wallingford Health Department and the Quinnipiac Valley Health District.

[6] Total nitrogen concentration means the total of the concentrations of: ammonia nitrogen, organic nitrogen, nitrite nitrogen, and nitrate nitrogen. The calculated monthly mass loading of total nitrogen shall be reported in lbs/day. Total nitrogen shall also be reported once per year (in December) based on a rolling average.

[7] Following submission and approval of the requirements set forth in Paragraph 10(F) of this permit, the Department shall determine the need for requiring limits for acrylamide. Until this determination is made, the requirements for acrylamide are "monitoring only".

Remarks:

1. Abbreviations used for units are as follows: cfu means colony forming units; gpd means gallons per day; g/d means grams/day; kg/d means kilograms/day; mg/l = milligrams/liter; lbs/day means pounds per day; lbs/year means pounds per year; SU means Standard Units; µg/l means micrograms/liter; ng/l means nanograms/liter. Other abbreviations are as follows: NA means Not Applicable; ND means Non-Detectable; NR means Not Reportable; RDS means Range During Sampling.

2. Results for acute aquatic toxicity shall be reported on the DMR as the LC_{50} value obtained from the first 48 hours of a valid chronic toxicity test.

3. Results for chronic aquatic toxicity shall be reported on the DMR as the C-NOEC (Chronic-No Effect Concentration). The C-NOEC is defined as the highest concentration of effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the results exhibit a linear dose-response relationship.

4. "GSA Modified" pertains to the sample collection method for Total Residual Chlorine. For this monitoring parameter, grab samples shall be collected at least four times per operating day, but the Permittee may collect all four samples during the first shift of the sampling day. The Permittee shall report the arithmetic average of all of the grab sample analyses taken.

5. The Total Phosphorus limit shall take effect in accordance with the schedule approved in Paragraph 10(H) of the permit. The limits are seasonal and shall be in effect from April 1st until October 31st.

Table B

Discharge Serial Number: **001-A** | Monitoring Location: **G**

Wastewater Description: **Influent to the treatment system**

Monitoring Location Description: **Sampling station located between the equalization basin and the aeration basin**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Matrix-Specific Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acrylonitrile	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.050
Alkalinity	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	
Ammonia (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA	
Benzene	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Biochemical Oxygen Demand (BOD_5)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA	
Butanol	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	0.5
Butyl acetate	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.25
Chlorobenzene	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Ethanol	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	
Ethylbenzene	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Flow, Day of Sampling[1]	gpd	---	---	Three per week	Daily Flow	NA	NR	NA	
Formaldehyde	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	0.1
Isobutanol	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	0.5
Kjeldahl Nitrogen, Total (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA	
Methanol	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	0.5
Methylene chloride	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.050
Methyl methacrylate	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Nitrate (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA	
Nitrite (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA	
Nitrogen, Total	lbs/day	---	---	Three per week	Daily Composite	NA	NR	NA	
Organic Nitrogen (as N)	mg/l	---	---	Three per week	Daily Composite	NA	NR	NA	
Orthophosphate	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	
pH, Minimum	SU	NA	NA	NR	NA	---	Continuous	Min	
pH, Maximum	SU	NA	NA	NR	NA	---	Continuous	Max	
pH, Day of Sampling	SU	NA	NA	NR	NA	---	Continuous	RDS	
Phosphorus, Total	mg/l	---	---	Twice per month	Daily Composite	NA	NR	NA	
Styrene	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Toluene	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Trichloroethene	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.025
Volatiles, Method 624	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	
Xylenes, Total (o,m,p)	mg/l	---	---	Twice per month	Grab Sample Average	NA	NR	NA	0.050

(CONTINUED ON THE NEXT PAGE)

TABLE B FOOTNOTES AND REMARKS

Footnotes:

[1] There is no flow meter at this location. However, the influent flow is reported to be the same as the effluent flow. Therefore, for this parameter, the Permittee shall measure and report flow for this location based on the flow at the final effluent location.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Matrix-Specific Minimum Level refers to Section 6(A)(4) of this permit.

Remark:

Test results for each of the Method 624 volatiles must be submitted with the DMR each month.

Table C

Discharge Serial Number: **001-B** | Monitoring Location: **1**

Wastewater Description: **Treated domestic sewage**

Monitoring Location Description: **End of the chlorine contact chamber**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Chlorine, Total Residual	mg/l	NA	NA	NR	NA	---	Twice/day	Grab	0.030
Flow, Day of Sampling[1]	gpd	---	33,000	Twice/day	Daily Flow	NA	NR	NA	

TABLE C FOOTNOTES AND REMARKS

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day and shall report the Average Monthly Flow and the Maximum Daily Flow for the Day of Sampling for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level refers to Section 6(A)(4) of this permit.

Remark:

The Permittee shall disinfect/chlorinate the domestic sewage from May 1 until October 1. The Permittee shall use best efforts to maintain the total residual chlorine levels in the treated wastewater within a range of 0.5 – 3.0 ppm.

Table D

Discharge Serial Number: **001-E** | Monitoring Location: **1**

Wastewater Description: **Contaminated groundwater from Area 1: The acrylonitrile spill area (at Building 10)**

Monitoring Location Description: **Discharge from the Toluene/Water Separator**

Discharge is to: **Influent to the treatment system (DSN 001A)**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acrylonitrile	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
Benzene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.005
Chemical Oxygen Demand (COD)	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
Duration of Discharge	hr/day	---	---	Daily	Daily Flow	NA	NR	NA	
Ethylbenzene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.010
Flow, Average & Maximum[1]	gpd	---	180,000	Daily	Daily Flow	NA	NR	NA	
Flow, Day of Sampling	gpd	NA	---	Quarterly	Daily Flow	NA	NR	NA	
Methyl methacrylate	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
pH, Day of Sampling	SU	NA	NA	NR	NA	---	Quarterly	RDS	
Styrene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
Toluene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.005
Xylenes, Total (o,m,p)	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.002

TABLE D FOOTNOTES

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Average Daily Flow and the Maximum Daily Flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6(A)(4) of this permit.

Table E

Discharge Serial Number: **001-F** | Monitoring Location: **1**

Wastewater Description: **Landfill leachate**

Monitoring Location Description: **Leachate inlet in the final manhole before the grit chamber**

Discharge is to: **Influent to the treatment system (DSN 001A)**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acrylonitrile	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
Benzene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.005
Chemical Oxygen Demand (COD)	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
Duration of Discharge	hr/day	---	---	Daily	Daily Flow	NA	NR	NA	
Ethylbenzene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.010
Flow, Average & Maximum[1]	gpd	---	250,000	Daily	Daily Flow	NA	NR	NA	
Flow, Day of Sampling	gpd	---	---	Quarterly	Daily Flow	NA	NR	NA	
Methyl methacrylate	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
pH, Day of Sampling	SU	NA	NA	NR	NA	---	Quarterly	RDS	
Styrene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
Toluene	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.005
Xylenes, Total (o,m,p)	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.002

TABLE E FOOTNOTES

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Average Daily Flow and the Maximum Daily Flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6(A)(4) of this permit.

Table F

Discharge Serial Number: **001-I** | Monitoring Location: **1**

Wastewater Description: **Cyro's Building 10 wastewaters** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater)**; Cyro's Building 10A wastewaters** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Cyro's Building 45 wastewaters** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Stormwater collected in Cyro's raw materials spill containment sump**

Monitoring Location Description: **Cyro Metering Station (i.e., Sewer Connection Point IMH-10)**

Discharge is to: **Influent to the treatment system (DSN 001A)**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Matrix-Specific Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [1]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acenaphthene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Acenaphthylene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Acrylonitrile	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Anthracene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Benzene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Benzo(a)anthracene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
3,4-Benzofluoranthene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Benzo(k)fluoranthene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Benzo(a)pyrene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Bis(2-ethylhexyl)phthalate	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Carbon tetrachloride	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Chlorobenzene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Chloroethane	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Chloroform	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
2-Chlorophenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Chrysene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Di-n-butyl phthalate	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
1,2-Dichlorobenzene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,3-Dichlorobenzene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,4-Dichlorobenzene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,1-Dichloroethane	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,2-Dichloroethane	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,1-Dichloroethylene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,2-trans-Dichloroethylene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
2,4-Dichlorophenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
1,2-Dichloropropane	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,3-Dichloropropylene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Diethyl phthalate	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	

Table F

Discharge Serial Number: **001-I** | Monitoring Location: **1**

Wastewater Description: **Cyro's Building 10 wastewaters** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater)**; Cyro's Building 10A wastewaters** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Cyro's Building 45 wastewaters** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Stormwater collected in Cyro's raw materials spill containment sump**

Monitoring Location Description: **Cyro Metering Station (i.e., Sewer Connection Point IMH-10)**

Discharge is to: **Influent to the treatment system (DSN 001A)**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Matrix-Specific Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [1]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
2,4-Dimethylphenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Dimethyl phthalate	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
4,6-Dinitro-o-cresol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
2,4-Dinitrophenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
2,4-Dinitrotoluene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
2,6-Dinitrotoluene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Ethylbenzene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Fluoranthene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Fluorene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Hexachlorobenzene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Hexachlorobutadiene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Hexachloroethane	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Methyl chloride	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Methylene chloride	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Naphthalene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Nitrobenzene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
2-Nitrophenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
4-Nitrophenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Phenanthrene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Phenol	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Pyrene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Tetrachloroethylene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Toluene	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Total Chromium	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Total Copper	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Total Cyanide	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Total Lead	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Total Nickel	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
Total Zinc	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	

Table F

Discharge Serial Number: **001-I** | Monitoring Location: **1**

Wastewater Description: **Cyro's Building 10 wastewaters** (Equipment cleaning/maintenance-related wastewater, non-contact cooling water, sluice water, produced water, decant water, filtrate, non-contact cooling water, patty box wastewater, steam condensate, activated carbon regeneration wastewater, seal water, water treatment wastewater, washwater, laboratory wastewater, foam suppression test water, contaminated stormwater)**; Cyro's Building 10A wastewaters** (Sluice water, decant water, laboratory wastewater, air compressor condensate, air conditioner condensate); **Cyro's Building 45 wastewaters** (Cooling tower blowdown/maintenance, cooling tower maintenance overflow, water treatment wastewater, washwater, laboratory wastewater, eye wash/safety shower test water); **Stormwater collected in Cyro's raw materials spill containment sump**

Monitoring Location Description: **Cyro Metering Station (i.e., Sewer Connection Point IMH-10)**

Discharge is to: **Influent to the treatment system (DSN 001A)**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Matrix-Specific Minimum Level[3]
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [1]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
1,2,4-Trichlorobenzene	µg/l	---	---	Annually	Daily Composite	NA	NR	NA	
1,1,1-Trichloroethane	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
1,1,2-Trichloroethane	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Trichloroethylene	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Vinyl chloride	µg/l	---	---	Annually	Grab Sample Average	NA	NR	NA	
Biochemical Oxygen Demand (BOD_5)	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	
Chemical Oxygen Demand	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	
Di-N-Octyl phthalate	µg/l	---	---	Monthly	Daily Composite	NA	NR	NA	
Duration of Discharge	hr/day	---	---	Daily/Monthly	Daily flow	NA	NR	NA	
Ethyl acrylate	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Flow rate (Average daily)[1]	gpd	---	NA	Continuous	Daily flow	NA	NR	NA	
Flow, Maximum during 24 hour period[1]	gpd	NA	---	Continuous	Daily flow	NA	NR	NA	
Flow (Total, Day of Sampling)	gpd	NA	---	Monthly	Daily flow	NA	NR	NA	
Methyl acrylate	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Methyl methacrylate	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Oil & Grease, Total	mg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
pH, Day of Sampling	SU	NA	NA	NR	NA	---	Monthly	Grab	
Silver, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	
Styrene	µg/l	---	---	Monthly	Grab Sample Average	NA	NR	NA	
Total Suspended Solids	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA	

TABLE F FOOTNOTES AND REMARKS

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the total flow for each day and the Average Daily Flow and the Maximum Daily Flow for month.

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TABLE F FOOTNOTES AND REMARKS (CONTINUED)

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Matrix-Specific Minimum Level refers to Section 6(A)(4) of this permit.

Remarks:

1. Abbreviations used for units are as follows: gpd means gallons per day; mg/l = milligrams/liter; SU means Standard Units; µg/L means micrograms/liter. Other abbreviations are as follows: NA means Not Applicable; ND means Non-Detectable; NR means Not Reportable.

2. No stormwater shall be present in the discharge during sampling.

Table G

Discharge Serial Number: **DSN 002-1**	**Monitoring Location: 1**
Wastewater Description: **Fire suppression test water, air conditioner condensate, fire storage tank overflow water, engine cooling water associated with the testing of the emergency diesel pump**	
Monitoring Location Description: **Near the headwall, prior to entering the tributary**	
Discharge is to: **An unnamed tributary to the Quinnipiac River**	In Stream Waste Concentration: **100%** / Dilution: **1**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level [3]	Chemical Analysis required with Toxicity Test
		Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency[2]	Sample Type or measurement to be reported		
Acute Aquatic Toxicity, *Daphnia pulex* CTC=100%	%	NA	NA	NR	NA	% Survival ≥90%	Semi-Annual	Grab		
Acute Aquatic Toxicity, *Pimephales promelas* CTC=100%	%	NA	NA	NR	NA	% Survival ≥90%	Semi-Annual	Grab		
Ammonia (as N)	mg/L	NA	NA	NR	NA	---	Quarterly	Grab		✔
Copper, Total	µg/l	NA	NA	NR	NA	---	Quarterly	Grab	4	✔
Chlorine, Total Residual	µg/l	NA	NA	NR	NA	19	Quarterly	Grab	TBD	✔
Flow, Maximum[1]	gpd	NA	180,000	Monthly	Daily Flow	NA	Quarterly	NA		
Lead, Total	µg/l	NA	NA	NR	NA	---	Quarterly	Grab	TBD	✔
Nickel, Total	µg/l	NA	NA	NR	NA	---	Quarterly	Grab	5	✔
Oil & Grease, Total	mg/l	NA	NA	NR	NA	5.0	Quarterly	Grab		✔
pH, Day of Sampling	SU	NA	NA	NR	NA	6.0-9.0	Quarterly	Grab		✔
Temperature	° F	NA	NA	NR	NA	---	Quarterly	Grab		✔
Total Suspended Solids	mg/l	NA	NA	NR	NA	---	Quarterly	Grab		✔
Zinc, Total	µg/l	NA	NA	NR	NA	65	Quarterly	Grab	5	✔

TABLE G FOOTNOTES AND REMARKS

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the total flow each day and the Maximum Daily Flow for each month. This record shall be based on flow estimates using good engineering practices.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6(A)(4) of this permit.

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TABLE G FOOTNOTES AND REMARKS (CONTINUED)

[4] The noted permit limit is below the minimum level (ML). Therefore, compliance with this limit will be determined based on the ML. The Permittee shall conduct analysis for this parameter in accordance with an approved method. If the measured value is less than the ML, the results shall be reported in accordance with Section 6(A)(6) and the results will be considered to be in compliance with the permit limit. If the measured value is greater or equal to the ML, the actual results obtained shall be reported on the DMR and these results will be considered a violation of the permit limit.

Remarks:

1. Fire suppression test water consists of discharges from the following systems: Inspection Test Drain Water from Buildings 5, 7, 10, 27, 32, and 34; Sprinkler System Test Water from Buildings 5B, 7, 10, 27, and 32; Test water from fire hydrants/fire hoses in the following areas: NE of Building 10A, E of Building 32, S of Building 7, N of Building 1, E of Building 4, NE of Building 9, and N of Building 34. Air conditioner condensate is from Building 16.

2. All limits apply to dry weather conditions. "Dry weather" is defined as a climatic condition prior to which no precipitation or melt water has occurred for a period of three (3) days. The sampling collection point is also affected by groundwater infiltration. Therefore, the Permittee shall make best efforts to collect a sample when groundwater infiltration is at a minimum.

3. The results of the toxicity tests shall be recorded as % survival on the DMR.

4. If the Permittee is unable to achieve an ML for Total Residual Chlorine of 20 μg/L due to matrix effects, it shall, within 6 months of issuance of this permit, conduct and submit a Matrix/MDL Study and propose a Matrix-Specific ML for the review and approval of the Commissioner. For the first six months of issuance of this permit or until the Commissioner approves the Matrix-Specific ML, the Permittee shall use best efforts to achieve an ML for Total Residual Chlorine of 20 μg/L.

SECTION 6: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES

(A) Chemical Analysis

(1) Chemical analyses to determine compliance with limits and conditions established in this permit shall be performed using "sufficiently sensitive" methods approved pursuant to the 40 CFR 136 for the analysis of pollutants having approved methods under that part unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in section 22a-430-3(j)(7) of the RCSA. Chemicals which do not have approved methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with "sufficiently sensitive" methods specified in Section 6(A)(2) of this permit, unless an alternative method has been specifically approved in writing by the Commissioner.

(2) The following test methods shall be used to analyze the parameters identified below.

PARAMETER	METHOD OF ANALYSIS
Acetone	EPA Method 624
Acrylamide	EPA Method 8032
Benzoic Acid	EPA Method 625
Bisphenol A	ASTM D7065-06
Butanol	EPA Method 8015
Butyl acetate	EPA Method 624
Chlorine, Total Residual (DSN 001B only)	Standard Methods DPD Methodology
Cresol, ortho, meta, para	EPA Method 625
Diethyl amine	EPA Method 1671
Dimethyl amine	EPA Method 1671
Epichlorohydrin	EPA Method 624
Ethanol	EPA Method 8015
Ethyl acrylate	EPA Method 624
Ethylene glycol	EPA Method 1671
Formaldehyde	EPA Method 1667
Furfural	EPA Method 8315
Isobutanol	EPA Method 8015
Isopropanol	EPA Method 8015
Isopropylamine	EPA Method 8015
Methanol	EPA Method 8015
Methyl acrylate	EPA Method 624
Methyl ethyl ketone	EPA Method 624
Methyl methacrylate	EPA Method 624
Nonylphenol	ASTM D7065-06
Propylene glycol	EPA Method 1671
Styrene	EPA Method 624
tert-Butyl alcohol	EPA Method 8015
Triethylamine	EPA Method 8015
Xylene	EPA Method 624

If it is determined that any of the methods identified above are not appropriate for analyzing the subject parameter, the Permittee shall notify the Department as to the reason that the method is not appropriate and shall propose, for the approval of the Commissioner, a more suitable alternative method.

(3) If, during the term of this permit, a method is approved for use to analyze any of the parameters identified in this permit and that method is capable of achieving a lower minimum level than either the minimum level identified in the Section 5 Tables or the minimum level that is achievable using one of the methods identified in Paragraph 6(A)(2) above, the Permittee shall give notice to the Commissioner that it has determined that a more "sufficiently sensitive" test method is available and shall immediately begin monitoring using that method.

(4) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136 unless otherwise specified.

(5) The Minimum Levels and Matrix-Specific Minimum Levels specified in the Section 5 Tables represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters. Analyses for these parameters must include check standards within ten per cent of the specified Minimum Level or Matrix-Specific Minimum Level or calibration points equal to or less than the specified Minimum Level or Matrix-Specific Minimum Level.

(6) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this section of the permit.

(7) Effluent analyses for which quantification was verified during the analysis at or below the levels specified in the Section 5 Tables and which indicate that a parameter was not detected shall be reported as "less than x" where 'x' is the numerical value equivalent to the analytical method detection limit for that analysis.

(8) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level/Matrix-Specific Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with limitations or conditions specified in this permit.

(9) The analytical method used to determine the concentration of polychlorinated biphenyls (PCBs) shall be EPA Method 608.

SECTION 7: AQUATIC TOXICITY TESTING

(A) ***Acute Aquatic Toxicity Testing: DSN 002***

(1) Samples for monitoring of Aquatic Toxicity shall be collected and handled as prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012). Specifically,

(a) Composite samples shall be chilled as they are collected. Grab samples shall be chilled immediately following collection. Samples shall be held at 0-6 °C until Aquatic Toxicity testing is initiated.

(b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.

(c) Chemical analyses of the parameters identified in the permit under “Chemical Analysis Required with Toxicity Test” shall be conducted on an aliquot of the same sample tested for Aquatic Toxicity. At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine shall be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of test solution and in the dilution (control) water at the beginning of the test and at test termination. If total residual chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination.

(d) Tests for Aquatic Toxicity shall be initiated within 36 hours of sample collection.

(2) Monitoring for Aquatic Toxicity to determine compliance with the permit limit/condition on Aquatic Toxicity (invertebrate) above shall be conducted for 48-hours utilizing neonatal *Daphnia pulex* (less than 24-hours old)

(3) Monitoring for Aquatic Toxicity to determine compliance with the permit limit/condition for Aquatic Toxicity (vertebrate) above shall be conducted for 48-hours utilizing larval *Pimephales promelas* (1-14 days old with no more than 24-hours range in age).

(4) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012), except as specified below.

(a) Pass/Fail (single-concentration) tests shall be conducted at a specified CTC equal to the Aquatic Toxicity Limit, or 100% in the case of monitoring only conditions.

(b) Organisms shall not be fed during the tests.

(c) Copper nitrate shall be used as the reference toxicant.

(d) Synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/L (±5 mg/L) as $CaCO_3$ shall be used as dilution water.

(6) Compliance shall be demonstrated when the results of a valid pass/fail Aquatic Toxicity test indicates there is 90% or greater survival in the effluent at the specified CTC.

(B) ***Chronic (and Modified Acute) Aquatic Toxicity Testing: DSN 001***

(1) Chronic aquatic toxicity testing shall be performed on the discharge for the following: *Ceriodaphnia dubia* for survival and reproduction and *Pimephales promelas* for larval growth and survival. Acute aquatic toxicity requirements shall be determined from the first 48 hours of a valid chronic toxicity test. This testing shall be accomplished as follows:

(a) Chronic (and modified acute) toxicity testing shall be performed in accordance with the test methodology established in *Short-term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (EPA-821-R-02-013)

(b) Daily composite samples of the discharge shall be collected on: Day 1 of the test (for test initiation and renewal on Day 2 of the test); Day 3 of the test (for test solution renewal on Day 3 and Day 4 of the test); and on Day 5 of the test, (for test solution renewal on Day 5, Day 6, and Day 7 of the test).

(c) Chronic toxicity tests shall be comprised of a minimum of five effluent dilutions: 100% effluent, 50% effluent, 26% effluent, 12.5% effluent, 6.25% effluent, and if applicable, a dilution that represents a calculated IWC% effluent concentration as determined in Section 7(B)(4)(b). Quinnipiac River water shall be used as the dilution water unless approval has been obtained from the Department to use an alternative dilution water.

(d) Quinnipiac River water shall be collected approximately 500 feet upstream of the confluence of DSN 001 and DSN 002, outside of any area potentially impacted by DSN 001 and downstream of other effluent sources. Quinnipiac River water shall be collected on each renewal day.

(e) If the Quinnipiac River dilution water is found or is suspected to be toxic or unreliable, an alternative dilution water standard shall be used in the toxicity test. The use of an alternative dilution water standard is species-specific and shall be conditionally allowed in either of the following two instances:

i) Instance 1: *When an invalid toxicity test is repeated*. In this instance, the Permittee shall implement the use of an alternative dilution water sample without the approval of the Department if the following conditions are met: 1) the test is repeated during the required time frame; 2) the alternative dilution water is of known quality with hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids, similar to that of the Quinnipiac River and the alternative dilution water does not produce a toxic response; 3) receiving water controls are run during the alternative dilution water tests; 4) a complete toxicity test report is submitted by the Permittee and it shall clearly document: that site water toxicity rendered the first test invalid; that a re-test was conducted using an alternative dilution water that matched the characteristics of the site water; that site water controls were included in the re-test; and that the site water controls of the re-test met the minimum acceptability criteria. However, if the re-test documented that the site water controls met the minimum test acceptability criteria, site water must be used as the diluent in future toxicity tests. If the site water controls of the re-test failed to meet test acceptability criteria, an alternative dilution water may be used in future toxicity tests using the effected test organism after submitting written documentation to the Department.

ii) Instance 2: *In future toxicity tests, where there are at least two recent documented incidents where use of the Quinnipiac River as the dilution water was found to be unreliable*. In this instance, the Permittee must receive written approval from the Commissioner prior to using an alternative dilution water. The documentation submitted to the Department in support of the use of alternative dilution water in this instance must include the following: Documentation of site water toxicity including all supporting documentation as well an identification of the effected test organism and an identification of the effected quarterly test period; a description of the alternative dilution water proposed; a description of the controls that will be used in future toxicity tests. Upon approval, the Permittee shall implement the use of the alternative dilution water testing for the term of the permit. [In February 2011, the Permittee proposed to use an alternative dilution water for toxicity testing using *Pimephales promelas* because of the documented incidences where the Quinnipiac River was found to be unreliable for use with this species. The Permittee proposes to use synthetic freshwater as an alternative dilution water for this species. Based on the representations made by the Permittee, the Department has approved the use of an alternative dilution water (i.e., synthetic freshwater prepared as described in Section 7(B)(1)(f) below) for toxicity testing involving *Pimephales promelas*].

(f) Synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/l (±5 mg/l) as $CaCO_3$ prepared as described in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013) shall be used as laboratory control water.

(g) All samples, including composite samples, shall be chilled as they are being collected and shall not be dechlorinated, filtered, or modified in any way prior to the testing.

(h) Chemical analysis for the parameters identified in the permit under "Chemical Analysis required with Toxicity Test" shall be conducted on an aliquot of each sample of effluent and each sample of Quinnipiac River water used in the test.

(i) At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine shall be measured in each sample of effluent and Quinnipiac River water used in the test.

(j) Dissolved oxygen, pH, and temperature shall be measured in each sample of effluent and the Quinnipiac River water prior to and immediately following renewal of the test solutions.

(k) Tests shall employ neonatal (<24 hours old) *Ceriodaphnia dubia* and newly hatched *Pimephales promelas* (<24 hours old) as test organisms.

(*l*) Reference toxicant tests using reagent grade sodium chloride diluted with laboratory water to achieve a dilution series of 0.5, 1, 2, 4, and 8 g/l of sodium chloride shall be conducted on the same population or organisms used for the chronic toxicity test.

(m) If the laboratory control fails to meet test acceptability criteria for either of the test organisms at the end of the respective test periods, then the test is considered invalid and the test must be repeated.

(n) In the event of a failure to meet the acute toxicity limitations in Section 5, Table A, a single sample of the effluent shall be collected and re-tested for acute aquatic toxicity and the associated chemical parameters. The re-test to determine compliance with the acute toxicity limit shall be performed using a single sample with only the test species that failed and shall be terminated after 48 hours.

(2) A report detailing the results of the chronic and modified acute toxicity monitoring shall be submitted no later than 60 days following the day sampling was concluded for that test. The report shall include a summary of the test results which includes, at a minimum, percent survival in each replicate test chamber and all supporting chemical/physical measurements performed in association with the toxicity test. Endpoints to be reported are: 48-hour LC_{50} (acute endpoint), 7-day LC_{50} (survival), 7-day C-NOEC (survival), 7-day C-LOEC (survival), 7-day C-NOEC (growth), 7-day C-LOEC (growth), 7-day C-NOEC (reproduction), 7-day C-LOEC (reproduction), 7-day IC_{25} (growth and reproduction).

(3) If any chronic toxicity test result indicates a C-NOEC for any test species of less than 26% at the completion of the chronic toxicity test, the Permittee shall submit to the Department within 30 days of the conclusion of the test, a brief summary of the test results which includes, at a minimum, percent survival in each replicate test chamber and all supporting chemical/physical measurements performed in association with the toxicity test.

(4) In lieu of demonstrating compliance with the specific maximum daily toxicity limits in Section 5 Table A, the Permittee may demonstrate compliance with a maximum daily limit based on a re-calculated IWC that reflects the actual flows. The Permittee may re-calculate the IWC based on actual flows, provided: 1) the Permittee maintains an accurate record of measured discharge flows and hours of operation for all days on which a discharge occurs; and 2) the total daily flow for any single operating day does not exceed the average of the daily flows for the thirty consecutive operating days prior to the sampling date by more than 25 per cent.

The re-calculated IWC shall be determined as follows:

(a) The measured average daily flow (in gallons per hour) shall be tabulated for each of the prior 30 operating days and the arithmetic average for the 30 day period calculated (i.e., "the 30-day average hourly flow").

(b) The IWC (in gallons per hour) for the thirty consecutive operating days prior to the sampling date shall be calculated by dividing the 30-day average hourly flow by the sum of the 30-day average hourly flow and the dilution (in gallons per hour) allocated to the discharge:

$$IWC\% = \frac{Average\ Daily\ Flow\ (gph)}{Average\ Daily\ Flow\ (gph) + 267{,}739\ gph} \times 100$$

SECTION 8: REPORTING REQUIREMENTS

(A) The results of chemical analyses and any aquatic toxicity test required above shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing) at the following address. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(B) Complete and accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC_{50} values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the following address. The ATMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(C) If this permit requires monitoring of a discharge on a calendar basis (e.g., monthly, quarterly, etc.), but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE". For those Permittees whose required monitoring is discharge dependent (e.g., per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.

SECTION 9: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

(A) If any sample analysis indicates that an Aquatic Toxicity effluent limitation in Section 5 of this permit has been exceeded, or that the test was invalid, another sample of the effluent shall be collected and tested for Aquatic Toxicity and associated chemical parameters, as described above in Section 5 and Section 6, and the results reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing), at the address listed above, within 30 days of the exceedance or invalid test. Results of all tests, whether valid or invalid, shall be reported.

(B) If any two consecutive test results or any three test results in a twelve month period indicates that an Aquatic Toxicity Limit has been exceeded, the Permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report to Bureau of Materials Management and Compliance Assurance for the review and approval of the Commissioner in accordance with section 22a-430-3(j)(10)(c) of the RCSA describing proposed steps to eliminate the toxic impact of the discharge on the receiving water body. Such a report shall include a proposed time schedule to accomplish toxicity reduction and the Permittee shall comply with any schedule approved by the Commissioner.

(C) The Permittee shall notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division, within 72 hours and in writing within thirty days of the discharge of any substance listed in the application but not listed in the permit if the concentration or quantity of that substance exceeds two times the level listed in the application.

SECTION 10: SPECIAL CONDITIONS/COMPLIANCE SCHEDULE

(A) The Permittee plans to provide continuous flow monitoring for DSN 001-G and DSN 001-H by combining the discharges into one consolidated monitoring point ("piping consolidation"). The Permittee has submitted, for the Commissioner's review and written approval, plans and specifications for the proposed piping consolidation. On March 14, 2011, these plans and specification were approved. On or before one hundred and eighty (180) days after plan approval, the Permittee shall provide documentation for the approval of the Commissioner that continuous flow monitoring is provided.

(B) On or before ninety (90) days after approval of the piping consolidation identified in Paragraph 10(A), the Permittee shall collect and analyze a representative sample of the wastewater from the new consolidated monitoring point for purposes of completing Attachment O of the *Permit Application for Wastewater Discharges* and shall submit for the Commissioner's review and written approval a complete and certified Attachment O which shall include the results for all pollutants listed in Tables 1 and 2 and any pollutants listed in Tables 3 and 4 which are known or suspected present in the wastewater. Any and all laboratory data shall also be submitted. The test methods selected for each subject parameter shall be "sufficiently sensitive". Should any of information provided on the Attachment O differ from the information previously submitted, the permit shall be modified in accordance with RCSA section 22a-430-4(p)(5)(B).

(C) On or before ninety (90) days after issuance of this permit, the Permittee shall provide a thorough and complete identification to the Commissioner of the name of each raw material that is expected to be used or present in each final product, intermediate, byproduct, chemical additive, or treatment substance. One list shall be provided for Cytec and a separate list shall be provided for Cyro. Should any of information provided differ from the information previously submitted, the permit shall be modified in accordance with RCSA section 22a-430-4(p)(5)(B).

(D) In addition to RCSA Section 22a-430-3(p) and any other federal, state, or local requirements, the Permittee shall report all spills that discharge to the wastewater treatment plant, storm sewers, ground or surface waters to the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division within two (2) hours of discovery. Within seven (7) days of each spill event, the Permittee shall submit a written report to the Department which shall include: the date and time of the spill occurrence; the name of the Department staff person that the spill was verbally reported to and the date/time that the verbal notice was made; the volume and type of material spilled; a description of the containment and clean-up measures taken, including the fate of the spilled material; the date/time the remedial actions were taken; a determination of the cause of the spill, including whether it was attributable to human error or to equipment failure; a description of equipment and/or process modifications or additional steps required to prevent recurrent spills; a proposal for modifications to prevent recurrent spills, with a schedule to accomplish the modifications. If a future schedule is proposed in order to address a spill, the Permittee must provide the Department with monthly status reports until the work proposed is completed.

(E) The Permittee shall eliminate/minimize all accidental spills/discharges at the site. This shall be accomplished as follows:

(1) On or before sixty (60) days after the date of issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten days after retaining any consultant other than one originally identified under this paragraph, the Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant retained to perform the studies and oversee any

remedial measures required to achieve compliance with this section of the permit shall be a qualified professional engineer licensed to practice in Connecticut and shall have documented experience in engineering process operations in either the chemical manufacturing industry or the pharmaceutical industry. The Permittee shall submit to the Commissioner a description of a consultant's education, experience, and training that is relevant to the work required by this section of the permit within sixty (60) days after issuance of this permit. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

(2) On or before ninety (90) days after the date of issuance of this permit, the Permittee shall submit for the review and written approval of the Commissioner a comprehensive and thorough technical report which shall outline, in detail, any and all means for preventing and controlling accidental spills/discharges at the site and for minimizing the effect of such events. Such report shall include:

(a) An identification of all possible sources of accidental discharge of any raw material, product, by-product, and untreated/partially-treated wastes, that could accidentally be discharged into the waters of the State from any area on-site, including: loading/unloading areas, waste treatment areas, process equipment, and any ancillary equipment associated with these areas or equipment.

(b) An identification and detailed description of any and all technology, equipment, and procedures to be implemented at the site in order to eliminate/minimize/prevent accidental spills/releases including, but not limited to: material storage and control; operating procedures; process re-design and modification; spill and leak detection devices/methods; process technology; chemical spill management; monitoring and detection; auditing/inspections; and employee training. For each technology, equipment, or procedure identified in the report, the following information shall also be provided: an evaluation of how each item will achieve compliance with the requirements of this section including a prediction of the effectiveness of each item; the costs (capital and on-going) associated with the implementation of each item; a proposal to implement the preferred alternative or combination of alternatives with supporting justification for each alternative; and an implementation schedule containing dates when the technology, equipment, and procedures will be constructed, implemented, or operational. Such schedule shall represent the most expeditious schedule for performing each alternative.

(3) On or before sixty (60) days after the approval of the report identified in 10(E)(2) above, the Permittee shall submit, for the review and written approval of the Commissioner, a report containing the following information:

(a) A detailed implementation program and schedule to perform both the preferred alternative(s) and to submit all engineering plans and specifications related to the preferred alternative(s).

(b) A list all permits and approvals required for each alternative, including but not limited to any permits required under sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the Connecticut General Statutes; and a schedule for applying for and obtaining all permits and approvals required for such actions.

(4) The Permittee shall implement all remedial actions required by this section of the permit in accordance with the approved plans and specifications and the approved schedule as soon as possible. Within fifteen days after completing such actions, the Permittee shall certify to the Commissioner in writing that the actions have been completed as approved.

(F) With respect to acrylamide in the DSN 001 discharge, the Permittee shall take the following steps:

(1) On or before thirty (30) days after the date of issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify

the Commissioner in writing of the identity of such consultants. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten days after retaining any consultant other than one originally identified under this paragraph, Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant retained to perform the studies and oversee any remedial measures required to achieve compliance with this section shall be a qualified professional engineer licensed to practice in Connecticut acceptable to the Commissioner. The Permittee shall submit to the Commissioner a description of a consultant's education, experience and training that is relevant to the work required by this permit within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

(2) On or before sixty (60) days after the date of issuance of this permit, the Permittee shall propose numeric human health water quality criterion for acrylamide for the review and written approval of the Commissioner. The Permittee must demonstrate to the satisfaction of the Commissioner that the proposed criterion will attain and maintain applicable narrative water quality criteria and will fully protect the designated use(s). Such criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's *Water Quality Standards Handbook*, current risk assessment data, current exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents.

(3) Department staff will conduct a reasonable potential analysis using the proposed numeric criteria for acrylamide submitted by the Permittee. If reasonable potential exists for the acrylamide in the DSN 001 discharge to exceed the proposed criteria, the Department will establish effluent limitations developed from this criteria and shall modify the permit accordingly.

(4) The Permittee shall evaluate whether its existing wastewater treatment technology can satisfactorily treat acrylamide in the discharge such that the effluent limits established by the Department as set forth in Paragraph 10(F)(3) will be consistently met. On or before thirty days (30) days after the Department provides the Permittee with these effluent limitations, the Permittee shall submit documentation to the Department that it can either: 1) meet the effluent limitations; 2) cannot meet the effluent limitations.

(5) If the Permittee cannot meet the effluent limitations, it shall, within one hundred and eighty (180) days after the Department establishes these limits, provide to the Department, for its review and written approval, a comprehensive and thorough report which describes and evaluates actions which may be taken by the Permittee to achieve compliance with these limitations. Such report shall:

(a) evaluate alternative actions to achieve compliance with the limits including, but not limited to, pollutant source reduction, process changes/innovations, chemical substitutions, recycle and zero discharge systems, water conservation measures, and other internal and/or end-of-pipe treatment technologies;

(b) state in detail the most expeditious schedule for performing each alternative;

(c) list all permits and approvals required for each alternative, including but not limited to any permits required under sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the Connecticut General Statutes;

(d) propose a preferred alternative or combination of alternatives with supporting justification; and,

(e) propose a detailed program and schedule to perform all actions required by the preferred alternative including, but not limited to a schedule for submission of engineering plans and specifications on any internal and/or end-of-pipe treatment facilities, start and completion

of any construction activities related to any treatment facilities, and applying for and obtaining all permits and approvals required for such actions.

(6) The Permittee shall implement all actions required by this section of the permit in accordance with the approved plans and specifications and the approved schedule as soon as possible, but in no event later than four and one half years after issuance of this permit. On or before the final compliance date set forth in the approval of Paragraph 10(F)(5), the Permittee shall certify to the Commissioner in writing that the actions have been completed as approved.

(G) The Permittee shall address the toxicity in DSN 001 in accordance with the following:

(1) On or before thirty (30) days after the date of issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten days after retaining any consultant other than one originally identified under this paragraph, the Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant retained to perform the studies and oversee any remedial measures required to achieve compliance with the subject limitations shall be a qualified professional engineer licensed to practice in Connecticut acceptable to the Commissioner. The Permittee shall submit to the Commissioner a description of a consultant's education, experience and training, which is relevant to the work required by this permit within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

(2) Upon issuance of this permit, if any quarterly chronic test result indicates a C-NOEC for any test species of less than 26% effluent and the testing meets all test acceptability criteria, the Permittee shall notify the Department and immediately evaluate the source of the toxicity and the means in which the toxicity shall be eliminated/reduced. This evaluation shall include, but not be limited to, those protocols identified in EPA guidance[1] for conducting Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs), as those protocols relate to the subject discharge.

(3) Within ninety (90) days of completion of the investigation identified above, the Permittee shall submit a report for the review and written approval of the Commissioner which identifies the cause(s) of the unacceptable level of toxicity in the effluent and identifies the corrective actions that have been taken to reduce or eliminate the toxicity in the effluent. The report shall provide a summary of the information obtained through the investigation and shall specifically include, at a minimum, the following: a list of all sources of toxicity; a list of any and all corrective actions necessary to reduce or eliminate toxicity in the effluent and to prevent the recurrence of toxicity so that compliance with chronic toxicity effluent limitations can be consistently achieved; a detailed evaluation of each corrective action, including the efficiency and feasibility of each corrective action; a description of the manner in which the effectiveness of the remedial actions have been or will be evaluated; an expeditious schedule for the implementation of each corrective action proposed but not already taken; a list of all approvals and permits necessary to implement any future corrective actions; plans and specifications for any future corrective action.

(4) The Permittee shall implement all approved actions in accordance with the approved plans and specifications and the approved schedule.

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[1] EPA Guidance shall include, but is not limited to: *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA 600-2-88-070); *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition* (EPA 600 R-91-003); *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA 600-R-92-080); *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA 600-R-92-081); *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluent, Phase I* (EPA 600-6-91-005F).

(5) If the corrective actions taken above do not fully address compliance with the chronic whole effluent toxicity limitation identified in Section 5 of this permit to the satisfaction of the Commissioner, additional investigations shall be performed in accordance with a supplemental plan and schedule approved in writing by the Commissioner. Unless otherwise specified in writing by the Commissioner, the supplemental plan and schedule shall be submitted for the Commissioner's review and written approval on or before thirty (30) days after notice from the Commissioner that they are required. The Permittee shall implement all supplemental actions required by this section of the permit in accordance with the approved plans and specifications and the approved schedule.

(H) The Permittee shall achieve compliance with the Total Phosphorus effluent limitations for DSN 001 in Section 5, Table A in accordance with the following:

(1) On or before thirty (30) days after the date of issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten days after retaining any consultant other than one originally identified under this paragraph, Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant retained to perform the studies and oversee any remedial measures required to achieve compliance with the Total Phosphorus limitations shall be a qualified professional engineer licensed to practice in Connecticut and acceptable to the Commissioner. The Permittee shall submit to the Commissioner a description of a consultant's education, experience and training that is relevant to the work required by this permit within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

(2) On or before one hundred and eighty (180) days after the date of issuance of this permit, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report which describes and evaluates alternative actions which may be taken by the Permittee to achieve compliance with the Total Phosphorus effluent limitations in Section 5, Table A of this permit. Such report shall:

(a) evaluate alternative actions to achieve compliance with the Phase 1 and Phase 2 Total Phosphorus limits in Section 5 including, but not limited to, pollutant source reduction, process changes/innovations, chemical substitutions, recycle and zero discharge systems, water conservation measures, and other internal and/or end-of-pipe treatment technologies. Such evaluation shall also consider any adverse environmental impacts that may occur with each alternative and quantify that impact;

(b) state in detail the most expeditious schedule for performing each alternative;

(c) list all permits and approvals required for each alternative, including but not limited to any permits required under sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the Connecticut General Statutes;

(d) propose a preferred alternative or combination of alternatives with supporting justification for each Phase; and,

(e) propose a detailed program and schedule to perform all actions required by the preferred alternative for each Phase including but not limited to a schedule for submission of engineering plans and specifications on any internal and/or end of pipe treatment facilities, start and completion of any construction activities related to any treatment facilities, and applying for and obtaining all permits and approvals required for such actions.

(3) The Permittee shall implement all actions required by this section of the permit in accordance with the approved plans and specifications and approved schedule as soon as possible but in no event

shall the actions necessary to achieve compliance with the Phase 2 limit be implemented later than four and one half years after the date of issuance of this permit.

(4) On or before the final compliance dates set forth in the approval of Paragraph 10(H)(2), the Permittee shall certify to the Commissioner in writing that it has achieved compliance with the Phase 1 and Phase 2 Total Phosphorus limit(s) in Section 5, Table A of this permit.

(I) The Permittee shall relocate the DSN 001 outfall from the unnamed tributary directly into the Quinnipiac River ("re-piping project"). This shall be accomplished as follows:

(1) On or before thirty (30) days after the date of issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten days after retaining any consultant other than one originally identified under this paragraph, Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant retained to perform the studies and oversee any remedial measures shall be a qualified professional engineer licensed to practice in Connecticut acceptable to the Commissioner. The Permittee shall submit to the Commissioner a description of a consultant's education, experience and training that is relevant to the work required by this permit within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

(2) On or before two hundred and seventy (270) days after the date of issuance of this permit, the Permittee shall submit for the Commissioner's review and written approval a report that shall identify all actions which shall be taken by the Permittee to re-locate the outfall from the un-named tributary directly into the Quinnipiac River. Such report shall:

(a) evaluate all actions necessary to provide a pipeline to convey the effluent from the wastewater treatment plant directly into the Quinnipiac River.

(b) propose a preferred alternative or combination of alternatives with supporting justification; and state in detail the most expeditious schedule for performing each alternative;

(c) list all permits and approvals required for each alternative, including but not limited to, any permits required under sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the Connecticut General Statutes and any requirements concerning endangered species;

(d) propose a detailed program and schedule to perform all actions required by the preferred alternative including but not limited to a schedule for submission of engineering plans and specifications on any internal and/or end of pipe treatment facilities, start and completion of any construction activities related to any treatment facilities, and applying for and obtaining all permits and approvals required for such actions.

(e) provide the following specific information related to the re-piping project:

(*i*) *Outfall Description*: A description of the proposed re-located outfall (i.e., the physical description of the discharge structure, including its location and dimensions, its distance from the nearest bank, its height from the river bottom, the maximum projected flow rate and velocity of the effluent through the structure).

(*ii*) *Computer Modeling*: Results of computer modeling conducted by the Permittee in order to evaluate the projected dispersion of the effluent in the receiving water as the result of the re-location of the outfall. The Permittee shall evaluate all available computer models and select at least one that is most suitable to model

the proposed re-located outfall. The Permittee shall submit any and all results of the computer modeling efforts including the input values, the assumptions, and the outcome of the model(s).

(*iii*) *Receiving Water Information*: Information related to the receiving water body, including: the classification of the receiving water; the critical flows of the receiving water; the quality of the receiving water as determined from ambient sample results; channel depth and width; an identification of any and all designated uses of the receiving water in the subject area or, if applicable, in any adjacent waters which the discharged effluent could affect; a description of any known or potential impacts to these uses as a result of re-locating the discharge; an identification of all point source and non-point source discharges within 2,000 feet upstream and downstream of the discharge, including information concerning the impact(s) of the re-located discharge on the receiving water relative to the neighboring discharges.

(*iv*) *Dilution Projection*: The Permittee shall estimate the projected dilution that the re-located outfall will provide.

(f) provide a schedule for the expeditious completion of a tracer study on the outfall.

(3) The Permittee shall implement all actions required by this section of the permit in accordance with the approved plans and specifications and the approved schedule as soon as possible. Within fifteen (15) days of completing the re-piping project, the Permittee shall certify for the Commissioner's approval that it has re-located the outfall in accordance with the approved plans and specifications.

(4) Following re-location of the outfall from the tributary into the Quinnipiac River, the Permittee shall conduct a tracer (dye) study in order to evaluate the dispersion of the effluent in the receiving water as a result of the re-location of the outfall. The dye study shall be conducted using good engineering practices and shall be undertaken during critical receiving flow conditions and during normal plant production and discharge conditions. Following completion of the dye study, the Permittee shall submit to the Department any and all information concerning the manner in which the dye study was carried out as well as a detailed description of the behavior of the effluent plume in the receiving water, including all conclusions drawn as a result of the study. The Permittee shall also estimate the dilution ratio that the re-located outfall provides based on the dye study. This ratio shall represent critical dilution at the edge of the mixing zones under worse-case scenario conditions using the smallest feasible mixing zones. The results of the dye study and all related supporting information noted herein shall be provided within thirty (30) days of completion of the dye study.

(5) If the results of the dye study demonstrate that the outfall will not provide dilution of at least 3.8:1, the Department shall re-calculate the permit limits using the actual dilution factor and modify the permit accordingly; the Permittee shall immediately comply with these re-calculated limits upon written notification from the Department. If the results of the dye study demonstrate that the outfall will provide dilution in excess of 3.8:1, the Permittee shall continue to comply with limits based on the 3.8:1 dilution, but may request a modification of its permit consistent with the actual dilution factor.

(J) The Permittee shall submit to the Commissioner quarterly status reports for the projects identified in Section 10 of this permit effective upon permit issuance through to project completion. Status reports shall be due on the following dates: March 1st, June 1st, September 1st, and December 1st. Status reports shall include, but not be limited to, a detailed description of progress made by the Permittee in performing actions required by this section of the permit in accordance with the approved schedule including, but not limited to, development of engineering plans and specifications, construction activity, contract bidding, operational changes, preparation and submittal of permit applications, and any other actions required by Section 10 of this permit.

(K) The Permittee shall use best efforts to submit to the Commissioner all documents required by this section of the permit in a complete and approvable form. If the Commissioner notifies the Permittee that any document

or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the Permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. In approving any document or other action under this Compliance Schedule, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.

(L) Dates. The date of submission to the Commissioner of any document required by this section of the permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this section of the permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this section of the permit means calendar day. Any document or action which is required by this section only of the permit, to be submitted, or performed, by a date which falls on, Saturday, Sunday, or, a legal Connecticut or federal holiday, shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or legal Connecticut or federal holiday.

(M) Notification of noncompliance. In the event that the Permittee becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this section of the permit, except for the final compliance dates above, the Permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates that may be approved in writing by the Commissioner. Notification by the Permittee shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the Commissioner in writing.

(N) Notice to Commissioner of changes. Within fifteen days of the date the Permittee becomes aware of a change in any information submitted to the Commissioner under this section of the permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the Commissioner.

(O) Submission of documents. Any document, other than a discharge monitoring report, required to be submitted to the Commissioner under this section of the permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

Christine Gleason, Sanitary Engineer
Department of Environmental Protection
Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division
79 Elm Street
Hartford, CT 06106-5127

This permit modification revises and supersedes NPDES Permit No. CT0000086 issued on May 17, 2011.

This permit modification is hereby issued on

DRAFT

MICHAEL SULLIVAN
Deputy Commissioner

MS:CMG