AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

General Electric Company

is authorized to discharge from a facility located at

General Electric Aviation
1000 Western Avenue
Lynn, MA 01910

to the receiving water named

Saugus River

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

This permit shall become effective on the first day of the calendar month following 60 days after signature. If no comments are received, this permit shall become effective following signature.

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

This permit supersedes the permit issued on September 29, 1993.

This permit consists of 49 pages in Part I including effluent limitations, monitoring requirements, 11 pages in Attachment 1 – Marine Chronic Toxicity Test Procedure and Protocol (1996), 1 page in Attachment 2 – Outfalls/Intakes Map, and 25 pages in Part II including General Conditions and Definitions.

Signed this day of

_____
Stephen S. Perkins, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

_____
David Ferris, Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date:

   a. discharges to the Saugus River through the **Drainage System Outfalls (Outfall Serial Numbers 001, 007, 010, 019, 027B, 028, 030, and 031)** are prohibited during dry weather conditions and the first 30 minutes of wet weather conditions;[1, 2]

   b. the permittee is authorized after the first 30 minutes of wet weather conditions, until the onset of dry weather conditions, to discharge stormwater and "allowable non-stormwater discharges"[3] (commingled with "minimal non-stormwater flows of other types")[4, 5] through the **Drainage System Outfalls (Outfall Serial Numbers 001, 007, 010, 019, 027B, 028, 030, and 031)** to the Saugus River. Such discharges shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [6, 7]	
		Average Monthly	Maximum Daily	Measurement Frequency [8]	Sample Type
Flow	MGD	Report	Report	Daily	Estimate
Gate Openings [9]	openings	Report Total Monthly		Continuous	Count
pH [10]	SU	----	6.0 – 8.5	1/Quarter	Grab
Oil and Grease (O&G)	mg/L	10	15	1/Quarter	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Total BTEX	µg/L	Report	100	1/Month	Grab
Benzene	µg/L	Report	5.0	1/Month	Grab
Toluene	µg/L	Report	Report	1/Month	Grab
Ethylbenzene	µg/L	Report	Report	1/Month	Grab
Total Xylenes	µg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [6, 7]	
		Average Monthly	Maximum Daily	Measurement Frequency [8]	Sample Type
Total Cyanide [11]	µg/L	Report	1.0 [(12, 13)]	1/Month	Grab
Volatile Organic Compounds (VOCs), Total	µg/L	Report	Report	1/Month	Grab
carbon tetrachloride	µg/L	Report	Report	1/Month	Grab
1,4 (or p)-dichlorobenzene (p-DCB)	µg/L	Report	Report	1/Month	Grab
1,2 (or o)-dichlorobenzene (o-DCB)	µg/L	Report	Report	1/Month	Grab
1,3 (or m)-dichlorobenzene (m-DCB)	µg/L	Report	Report	1/Month	Grab
1,1 dichloroethane (DCA)	µg/L	Report	Report	1/Month	Grab
1,2 dichloroethane (DCA)	µg/L	Report	Report	1/Month	Grab
1.1 dichloroethylene (DCE)	µg/L	Report	Report	1/Month	Grab
cis-1,2 dichloroethylene (DCE)	µg/L	Report	Report	1/Month	Grab
dichloromethane (methylene chloride)	µg/L	Report	Report	1/Month	Grab
tetrachloroethylene (PCE)	µg/L	Report	Report	1/Month	Grab
1,1,1 trichloroethane (TCA)	µg/L	Report	Report	1/Month	Grab
1,1,2 trichloroethane (TCA)	µg/L	Report	Report	1/Month	Grab
trichloroethylene (TCE)	µg/L	Report	Report	1/Month	Grab
chloroethene (vinyl chloride)	µg/L	Report	Report	1/Month	Grab
Total Residual Chlorine (TRC)	µg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [6, 7]	
		Average Monthly	Maximum Daily	Measurement Frequency [8]	Sample Type
Metals					
Antimony	mg/L	Report	Report	1/Month	Grab
Cadmium	mg/L	Report	Report	1/Month	Grab
Copper	mg/L	Report	Report	1/Month	Grab
Iron	mg/L	Report	Report	1/Month	Grab
Lead	mg/L	Report	Report	1/Month	Grab
Nickel	mg/L	Report	Report	1/Month	Grab
Silver	mg/L	Report	Report	1/Month	Grab
Zinc	mg/L	Report	Report	1/Month	Grab
Total Polycyclic Aromatic Hydrocarbons (PAHs)	µg/L	Report	Report	1/Month	Grab
Group I Polycyclic Aromatic Hydrocarbons (PAHs)					
benzo(a)anthracene	µg/L	Report	Report	1/Month	Grab
benzo(a)pyrene	µg/L	Report	Report	1/Month	Grab
benzo(b)fluoranthene	µg/L	Report	Report	1/Month	Grab
benzo(k)fluoranthene	µg/L	Report	Report	1/Month	Grab
chrysene	µg/L	Report	Report	1/Month	Grab
dibenz(a,h)anthracene	µg/L	Report	Report	1/Month	Grab
indeno(1,2,3-cd)pyrene	µg/L	Report	Report	1/Month	Grab
Total Polychlorinated Biphenyls (PCBs) [14]	µg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [6, 7]	
		Average Monthly	Maximum Daily	Measurement Frequency [8]	Sample Type
Whole Effluent Toxicity (WET)					
Acute LC_{50} [15, 16]	%	Report		1/Quarter	Composite[17]
Chronic C-NOEC [15, 16]	%	Report		1/Quarter	Composite[17]
Hardness [18]	mg/L	Report		1/Quarter	Composite[17]
Alkalinity [18]	mg/L	Report		1/Quarter	Composite[17]
pH [18]	SU	Report		1/Quarter	Composite[17]
Specific Conductance [18]	µmhos/cm	Report		1/Quarter	Composite[17]
Total Solids [18]	mg/L	Report		1/Quarter	Composite[17]
Total Ammonia Nitrogen, as Nitrogen [18]	mg/L	Report		1/Quarter	Composite[17]
Total Organic Carbon [18]	mg/L	Report		1/Quarter	Composite[17]
Total Residual Chlorine [18]	mg/L	Report		1/Quarter	Composite[17]
Dissolved Oxygen [18]	mg/L	Report		1/Quarter	Composite[17]
Cadmium, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Chromium, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Lead, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Copper, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Zinc, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Nickel, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Aluminum, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Magnesium, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]
Calcium, Total Recoverable [18]	mg/L	Report		1/Quarter	Composite[17]

See pages 6-8 for explanation of footnotes.

Footnotes:

1. For the purposes of this permit, at any time weather conditions are considered either "wet weather" conditions or "dry weather" conditions. Wet weather is defined as any time period that begins with an hour that received 0.1 inches or more of rainfall (or equivalent precipitation) and continues until two hours past the last hour that precipitation is recorded. Dry weather is any time which is not wet weather. The permittee may either collect hourly rainfall data at the facility, or use hourly rainfall data from a nearby source, however, the hourly rainfall data source shall be consistent throughout the effectiveness of the permit.

2. During the first 30 minutes of wet weather conditions, stormwater and any non-stormwater in the Drainage System must be collected and conveyed to the CDTS for treatment prior to discharge through Outfall 027A, subject to effluent limits and other requirements applicable to discharges through Outfall 027A.

3. "Allowable non-stormwater discharges" refers to uncontaminated groundwater, steam condensate, turbine condensate, and condensate from air receivers.

4. "Non-stormwater flows (or discharges) of other types" refers to "non-allowable non-stormwater flows" or "flows or discharges that are neither stormwater nor "allowable non-stormwater discharges." The non-allowable non-stormwater flows at the Drainage System Outfalls consist of contaminated groundwater, cooling water, condensate blowdown, steam conduit blowdown, boiler startup/soot blower drains/boiler draining for maintenance (intermittent), boiler filter backwash, ion exchange regeneration and backwash, de-aerator storage tanks (intermittent), boiler blowdown, building 64-A sump (intermittent), steam conduit water, cooling tower blowdown, stormwater collected in secondary containment dikes and truck loading areas, test cell washdown water (intermittent), hydrant testing, sprinkler system testing water, potable water used upon NCCW system failure, drain cleanouts (including drainage system cleaning), roof mounted air conditioner wash water (no detergent), excavation dewatering, and stormwater dye tracing.

5. This permit requires that the discharge of non-allowable non-stormwater flows through the Drainage System outfalls (Outfall Serial Numbers 001, 007, 010, 019, 027B, 028, 030, and 031) be eliminated to the maximum extent practicable. Therefore, the term "minimal non-stormwater flows of other types" refers to non-allowable non-stormwater discharges that it was impracticable to eliminate.

6. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the site through each outfall (Outfalls 001, 007, 010, 019, 027B, 028, 030, and 031), prior to mixing with the receiving waters. The discharge through each outfall shall be sampled and reported separately. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit.

7. Samples shall be taken during wet weather conditions, at least 72 hours from the previously measureable (i.e., greater than 0.1 inches rainfall) wet weather event. Grab sample(s) shall be taken during the first thirty minutes of the discharge. If collection of grab sample(s) during the first thirty minutes of discharge is impracticable, grab sample(s) shall be taken as soon after that as possible, and the permittee shall submit with the monitoring report a description of why the collection of the grab sample(s) during the first thirty minutes was impracticable. When a permittee is unable to collect grab sample(s) due to adverse weather conditions, the permittee must submit in lieu of sampling data a description of why the grab sample(s) could not

be collected, including available documentation of the event. Adverse weather conditions which may prohibit the collection of sample(s) include weather conditions that pose a danger to personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of sample(s) impracticable (drought, extended frozen conditions, specified storm event did not occur during sampling period, etc.) A "no discharge" report shall be submitted for those sampling periods in which there is no discharge.

8. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of four (4) discharge events in each calendar year, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. Quarterly sampling shall be performed concurrently with the monthly monitoring event. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

9. The permittee shall report the total number of gate openings each month. The permittee shall also report the date, times, and duration that each gate is open, along with the corresponding weather conditions at the time of gate opening and during the gate opening, the flow during gate opening, and the time when the gate closes, along with the corresponding weather condition. This information shall be submitted with the DMRs.

10. Required for state certification.

11. Limits for cyanide are based on EPA's water quality criteria expressed as micrograms of free cyanide per liter (ug/L). There is currently no EPA approved method for free cyanide. Therefore, total cyanide must be reported.

12. The effluent limitation for total cyanide applies to the discharge through Outfall 001 only. The remaining Drainage System outfalls require monitoring (without effluent limitations) for total cyanide.

13. Although the effluent limit for cyanide is 1.0 ug/L, the compliance limit is equal to the minimum level (ML) of the test method (i.e., 10 ug/L for Method 335.4).

14. In the November 2002 WQC, EPA revised the definition of Total PCBs for aquatic life as the "sum of all homologue, all isomer, all congener, or all Aroclor analyses."

15. The permittee shall conduct quarterly chronic (and modified acute) toxicity tests. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the inland silverside, *Menidia beryllina*, and sea urchin, *Arbacia punctulata*. Toxicity test samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th, and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. The tests must be performed in accordance with test procedures and protocols specified in Attachment 1 of the permit.

    After submitting WET test results for at least one year, and a minimum of four consecutive sets of WET test results demonstrating no toxicity, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

16. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment 1 (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the *Self-Implementing Alternative Dilution Water Guidance* which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA, Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment 1. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment 1.

17. A composite sample shall consist of a minimum of eight (8) grab samples of equal volume collected at equal intervals during a 24-hour period and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period. In the event that the discharge does not last 24 hours, sample at hourly intervals for the length of time of the discharge, not to be less than 4 hours (i.e., no less than four samples).

18. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Total Ammonia Nitrogen as Nitrogen, Alkalinity, pH, Specific Conductance, Total Solids, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Total Recoverable Aluminum, Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Zinc, Total Recoverable Magnesium, and Total Recoverable Calcium found in the 100 percent effluent sample. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report. These samples, taken in accordance with the WET testing requirements, may be used to satisfy other sampling requirements as specified in the table above.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated non-stormwater flows and stormwater from the Consolidated Drains Treatment System through **Outfall Serial Number 027A** to the Saugus River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [1]	
		Average Monthly	Maximum Daily	Measurement Frequency [2]	Sample Type
Flow[3]	MGD	Report	Report	1/Month	Estimate
pH [4]	SU	----	6.5 – 8.5	1/Month	Grab
Oil and Grease (O&G)	mg/L	10	15	1/Month	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Temperature	ºF	Report	85	1/Month	Grab
Polychlorinated Biphenyls (PCBs) [5]	µg/L	0.03 [6]	Report	1/Month	Grab
Total Residual Oxidants (TRO)	µg/L	Report	Report	1/Month	Grab
Total Petroleum Hydrocarbons (TPH)	mg/L	Report	5.0	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [1]	
		Average Monthly	Maximum Daily	Measurement Frequency [2]	Sample Type
Polycyclic Aromatic Hydrocarbons (PAHs)					
Total Group I PAHs	µg/L	Report	10.0 [(7)]	1/Month	Grab
Total Group II PAHs	µg/L	Report	100.0 [(7)]	1/Month	Grab
benzo(a)anthracene	µg/L	Report	Report	1/Month	Grab
benzo(a)pyrene	µg/L	Report	Report	1/Month	Grab
benzo(b)fluoranthene	µg/L	Report	Report	1/Month	Grab
benzo(k)fluoranthene	µg/L	Report	Report	1/Month	Grab
chrysene	µg/L	Report	Report	1/Month	Grab
dibenz(a,h)anthracene	µg/L	Report	Report	1/Month	Grab
indeno(1,2,3-cd)pyrene	µg/L	Report	Report	1/Month	Grab
Total BTEX	µg/L	Report	100	1/Month	Grab
Benzene	µg/L	Report	5.0	1/Month	Grab
MTBE	µg/L	Report	100	1/Month	Grab
Toluene	µg/L	Report	Report	1/Month	Grab
Ethylbenzene	µg/L	Report	Report	1/Month	Grab
Total Xylenes	µg/L	Report	Report	1/Month	Grab
Cyanide[8]	µg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [1]	
		Average Monthly	Maximum Daily	Measurement Frequency [2]	Sample Type
Volatile Organic Compounds (VOCs), Total	µg/L	Report	Report	1/Month	Grab
carbon tetrachloride	µg/L	Report	4.4	1/Month	Grab
1,4 (or p)-dichlorobenzene (p-DCB)	µg/L	Report	5.0	1/Month	Grab
1,2 (or o)-dichlorobenzene (o-DCB)	µg/L	Report	600	1/Month	Grab
1,3 (or m)-dichlorobenzene (m-DCB)	µg/L	Report	320	1/Month	Grab
1,1 dichloroethane (DCA)	µg/L	Report	70	1/Month	Grab
1,2 dichloroethane (DCA)	µg/L	Report	5.0	1/Month	Grab
1.1 dichloroethylene (DCE)	µg/L	Report	3.2	1/Month	Grab
cis-1,2 dichloroethylene (DCE)	µg/L	Report	70	1/Month	Grab
dichloromethane (methylene chloride)	µg/L	Report	4.6	1/Month	Grab
tetrachloroethylene (PCE)	µg/L	Report	5.0	1/Month	Grab
1,1,1 trichloroethane (TCA)	µg/L	Report	200	1/Month	Grab
1,1,2 trichloroethane (TCA)	µg/L	Report	5.0	1/Month	Grab
trichloroethylene (TCE)	µg/L	Report	5.0	1/Month	Grab
chloroethene (vinyl chloride)	µg/L	Report	2.0	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [1]	
		Average Monthly	Maximum Daily	Measurement Frequency [2]	Sample Type
Metals					
Antimony	mg/L	Report	Report	1/Month	Grab
Arsenic	mg/L	Report	Report	1/Month	Grab
Beryllium	mg/L	Report	Report	1/Month	Grab
Cadmium	mg/L	Report	Report	1/Month	Grab
Calcium	mg/L	Report	Report	1/Month	Grab
Chromium	mg/L	Report	Report	1/Month	Grab
Copper	mg/L	Report	Report	1/Month	Grab
Iron	mg/L	Report	Report	1/Month	Grab
Ferrous Iron	mg/L	Report	Report	1/Month	Grab
Lead	mg/L	Report	Report	1/Month	Grab
Magnesium	mg/L	Report	Report	1/Month	Grab
Manganese	mg/L	Report	Report	1/Month	Grab
Mercury	mg/L	Report	Report	1/Month	Grab
Nickel	mg/L	Report	Report	1/Month	Grab
Selenium	mg/L	Report	Report	1/Month	Grab
Silver Sodium	mg/L	Report	Report	1/Month	Grab
Thallium	mg/L	Report	Report	1/Month	Grab
Zinc	mg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [1]	
		Average Monthly	Maximum Daily	Measurement Frequency [2]	Sample Type
Whole Effluent Toxicity (WET)					
Acute LC_{50} [9,10]	%	Report		1/Quarter	Composite [11]
Chronic C-NOEC [9,10]	%	Report		1/Quarter	Composite [11]
Hardness [12]	mg/L	Report		1/Quarter	Composite [11]
Alkalinity [12]	mg/L	Report		1/Quarter	Composite [11]
pH [12]	SU	Report		1/Quarter	Composite [11]
Specific Conductance [12]	µmhos/cm	Report		1/Quarter	Composite [11]
Total Solids [12]	mg/L	Report		1/Quarter	Composite [11]
Ammonia [12]	mg/L	Report		1/Quarter	Composite [11]
Total Organic Carbon [12]	mg/L	Report		1/Quarter	Composite [11]
Total Residual Chlorine [12]	mg/L	Report		1/Quarter	Composite [11]
Dissolved Oxygen [12]	mg/L	Report		1/Quarter	Composite [11]
Total Cadmium [12]	mg/L	Report		1/Quarter	Composite [11]
Total Chromium [12]	mg/L	Report		1/Quarter	Composite [11]
Total Lead [12]	mg/L	Report		1/Quarter	Composite [11]
Total Copper [12]	mg/L	Report		1/Quarter	Composite [11]
Total Zinc [12]	mg/L	Report		1/Quarter	Composite [11]
Total Nickel [12]	mg/L	Report		1/Quarter	Composite [11]
Total Aluminum [12]	mg/L	Report		1/Quarter	Composite [11]
Total Magnesium [12]	mg/L	Report		1/Quarter	Composite [11]
Total Calcium [12]	mg/L	Report		1/Quarter	Composite [11]

See pages 14-15 for explanation of footnotes.

Footnotes:

1. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the CDTS, prior to mixing with the receiving waters. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit.

2. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of four (4) discharge events in each calendar year, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. Quarterly sampling shall be performed concurrently with the monthly monitoring event. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

3. Flow through Outfall 027A shall not exceed the design capacity of the treatment system.

4. Required for state certification.

5. In the November 2002 WQC, EPA revised the definition of Total PCBs for aquatic life as the "sum of all homologue, all isomer, all congener, or all Aroclor analyses."

6. The total PCB monthly average compliance limit for this discharge is set at 0.065 ug/L, which is the minimum level of the analytical method required by this permit (Modified Method 8082). The permittee will: 1) use Modified Method 8082, (2) meet all the specifications within Modified Method 8082 (3) make every effort to achieve a minimum detection level (MDL) of 0.03 ug/L using Modified Method 8082, and (4) provide the result of total PCBs as the sum of all Aroclors. Sample results of less than 0.065 ug/L shall be reported as zero on the discharge monitoring report (DMR); numerical results of all samples, including results less than the ML, shall be reported in an attachment to the DMR.

7. Total Group I and Total Group II PAHs shall be reported as the sum of the detectable concentrations of the individual PAH compounds. Sample results of less than the MLs shall be reported as zero on the discharge monitoring report (DMR); numerical results of all samples, including results less than the ML, shall be reported in an attachment to the DMR. The ML is defined as the level at which the entire analytical system gives recognizable mass spectra and acceptable calibration points. This level corresponds to the lower points at which the calibration curve is determined based on the analysis of the pollutant(s) of concern in reagent water. PAH analysis shall include the following compounds and their respective MLs as identified in parenthesis for each compound. benzo(a)anthracene (<0.05 µg/L), benzo(a)pyrene (<0.05 µg/L), benzo(b)fluoranthene (<0.05 µg/L), benzo(k)fluoranthene (<0.05 µg/L), chrysene (<0.5 µg/L), dibenzo(a,h)anthracene (<0.10 µg/L), indeno(1,2,3-cd)pyrene (<0.10 µg/L), and naphthalene (5.00 µg/L), acenaphthene (<5.00 µg/L), acenaphthylene (<5.00 µg/L), anthracene (<2.0 µg/L), benzo(ghi)perylene (<0.2 µg/L), fluoranthene (<0.50 µg/L), fluorene (<0.5 µg/L), naphthalene (<5.00 µg/L), phenanthrene (<2.00 µg/L), and pyrene (<1.00 µg/L).

8. Limits for cyanide are based on EPA's water quality criteria expressed as micrograms of free cyanide per liter (ug/L). There is currently no EPA approved method for free cyanide. Therefore, total cyanide must be reported.

9. The permittee shall conduct quarterly chronic (and modified acute) toxicity tests. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the inland silverside, *Menidia beryllina*, and sea urchin, *Arbacia punctulata*. Toxicity test samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th, and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. The tests must be performed in accordance with test procedures and protocols specified in Attachment 1 of the permit.

   After submitting WET test results for at least one year, and a minimum of four consecutive sets of WET test results demonstrating no toxicity, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

10. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment 1 (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the *Self-Implementing Alternative Dilution Water Guidance* which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs),* which may be found on the EPA, Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment 1. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment 1.

11. A composite sample shall consist of a minimum of eight (8) grab samples of equal volume collected at equal intervals during a 24-hour period and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period. In the event that the discharge does not last 24 hours, sample at hourly intervals for the length of time of the discharge, not to be less than 4 hours (i.e., no less than four samples).

12. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Total Ammonia Nitrogen as Nitrogen, Alkalinity, pH, Specific Conductance, Total Solids, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Total Recoverable Aluminum, Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Zinc, Total Recoverable Magnesium, and Total Recoverable Calcium found in the 100 percent effluent sample. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report. These samples, taken in accordance with the WET testing requirements, may be used to satisfy other sampling requirements as specified in the table above.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge non-contact cooling water (NCCW) from aircraft engine test facility heat exchangers, NCCW from the engine and compressor test facility, and condensate blowdown (commingled with minimal contaminated groundwater flows [1]) through **Outfall Serial Number 014 (Engine Testing Facility)** to the Saugus River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Flow (March 1st – July 31st)	MGD	5	45	1/Month	Estimate
Flow (August 1st – February 28th)	MGD	27	45	1/Month	Estimate
pH [4]	SU	----	6.5 – 8.5	1/Month	Grab
Temperature	°F	Report	90	1/Month	Grab
Oil and Grease (O&G)	mg/L	Report	15	1/Month	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Total Iron	mg/L	Report	Report	1/Month	Grab
Total Chromium	mg/L	Report	Report	1/Month	Grab
Total Lead	mg/L	Report	Report	1/Month	Grab
Polychlorinated Biphenyls (PCBs)	µg/L	Report	Report	1/Month	Grab
Polycyclic Aromatic Hydrocarbons (PAHs)	µg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Total Volatile Organic Compounds (VOCs)	µg/L	Report	Report	1/Quarter	Grab
Total BTEX	µg/L	Report	Report	1/Quarter	Grab
Benzene	µg/L	Report	Report	1/Quarter	Grab
Toluene	µg/L	Report	Report	1/Quarter	Grab
Ethylbenzene	µg/L	Report	Report	1/Quarter	Grab
Total Xylenes	µg/L	Report	Report	1/Quarter	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Whole Effluent Toxicity (WET)					
Acute LC_{50} [5,6]	%	Report		1/Quarter	Composite [7]
Chronic C-NOEC [5,6]	%	Report		1/Quarter	Composite [7]
Hardness [8]	mg/L	Report		1/Quarter	Composite [7]
Alkalinity [8]	mg/L	Report		1/Quarter	Composite [7]
pH [8]	SU	Report		1/Quarter	Composite [7]
Specific Conductance [8]	µmhos/cm	Report		1/Quarter	Composite [7]
Total Solids [8]	mg/L	Report		1/Quarter	Composite [7]
Ammonia [8]	mg/L	Report		1/Quarter	Composite [7]
Total Organic Carbon [8]	mg/L	Report		1/Quarter	Composite [7]
Total Residual Chlorine [8]	mg/L	Report		1/Quarter	Composite [7]
Dissolved Oxygen [8]	mg/L	Report		1/Quarter	Composite [7]
Total Cadmium [8]	mg/L	Report		1/Quarter	Composite [7]
Total Chromium [8]	mg/L	Report		1/Quarter	Composite [7]
Total Lead [8]	mg/L	Report		1/Quarter	Composite [7]
Total Copper [8]	mg/L	Report		1/Quarter	Composite [7]
Total Zinc [8]	mg/L	Report		1/Quarter	Composite [7]
Total Nickel [8]	mg/L	Report		1/Quarter	Composite [7]
Total Aluminum [8]	mg/L	Report		1/Quarter	Composite [7]
Total Magnesium [8]	mg/L	Report		1/Quarter	Composite [7]
Total Calcium [8]	mg/L	Report		1/Quarter	Composite [7]

See pages 19-20 for explanation of footnotes.

Footnotes:

1. Stormwater discharges through this outfall are prohibited. In addition, only "minimal contaminated groundwater" is permitted to be discharged, commingled with the other discharge flows authorized above. The discharge of contaminated groundwater must be eliminated to the maximum extent practicable. Therefore, "minimal" discharges are those that it was impracticable to eliminate.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the site through the outfall, prior to mixing with the receiving waters. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit.

3. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of four (4) discharge events in each calendar year, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. Quarterly sampling shall be performed concurrently with the monthly monitoring event. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

4. Required for state certification.

5. The permittee shall conduct quarterly chronic (and modified acute) toxicity tests. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the inland silverside, *Menidia beryllina*, and sea urchin, *Arbacia punctulata*. Toxicity test samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th, and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. The tests must be performed in accordance with test procedures and protocols specified in Attachment 1 of the permit.

   After submitting WET test results for at least one year, and a minimum of four consecutive sets of WET test results demonstrating no toxicity, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

6. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment 1 (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the *Self-Implementing Alternative Dilution Water Guidance* which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs),* which may be found on the EPA, Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment 1. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment 1.

7. A composite sample shall consist of a minimum of eight (8) grab samples of equal volume collected at equal intervals during a 24-hour period and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period. In the event that the discharge does not last 24 hours, sample at hourly intervals for the length of time of the discharge, not to be less than 4 hours (i.e., no less than four samples).

8. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Total Ammonia Nitrogen as Nitrogen, Alkalinity, pH, Specific Conductance, Total Solids, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Total Recoverable Aluminum, Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Zinc, Total Recoverable Magnesium, and Total Recoverable Calcium found in the 100 percent effluent sample. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report. These samples, taken in accordance with the WET testing requirements, may be used to satisfy other sampling requirements as specified in the table above.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge dry weather flows consisting of NCCW from power plant generating equipment, turbine condensate, steam condensate, boiler startup/soot blower drains/boiler draining for maintenance, boiler filter backwash and ion exchange regeneration and backwash, de-aerator storage tanks, and boiler blowdown (commingled with minimal contaminated groundwater[1]) through **Outfall Serial Number 018A (Power Plant)** to the Saugus River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Flow	MGD	28.7	35.6	1/Month	Estimate
pH[4]	SU	----	6.5 – 8.5	1/Month	Grab
Temperature	°F	Report	90	1/Week	Grab
Oil and Grease (O&G)	mg/L	Report	15	1/Month	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Polychlorinated Biphenyls (PCBs)	µg/L	Report	Report	1/Month	Grab
Polycyclic Aromatic Hydrocarbons (PAHs)	µg/L	Report	Report	1/Month	Grab
Total Residual Oxidants (TRO)	mg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Metals					
Copper	µg/L	Report	4.8	1/Month	Grab
Selenium	µg/L	Report	290	1/Month	Grab
Arsenic	µg/L	Report	Report	1/Month	Grab
Aluminum	µg/L	Report	Report	1/Month	Grab
Cadmium	µg/L	Report	Report	1/Month	Grab
Chromium	µg/L	Report	Report	1/Month	Grab
Cobalt	µg/L	Report	Report	1/Month	Grab
Iron	µg/L	Report	Report	1/Month	Grab
Lead	µg/L	Report	Report	1/Month	Grab
Mercury	µg/L	Report	Report	1/Month	Grab
Titanium	µg/L	Report	Report	1/Month	Grab
Zinc	µg/L	Report	Report	1/Month	Grab
Total Volatile Organic Compounds (VOCs)	µg/L	Report	Report	1/Quarter	Grab
Total BTEX	µg/L	Report	Report	1/Quarter	Grab
Benzene	µg/L	Report	Report	1/Quarter	Grab
Toluene	µg/L	Report	Report	1/Quarter	Grab
Ethylbenzene	µg/L	Report	Report	1/Quarter	Grab
Total Xylenes	µg/L	Report	Report	1/Quarter	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Whole Effluent Toxicity (WET)					
Acute LC_{50} [5,6]	%	Report		1/Quarter	Composite [7]
Chronic C-NOEC [5,6]	%	Report		1/Quarter	Composite [7]
Hardness [8]	mg/L	Report		1/Quarter	Composite [7]
Alkalinity [8]	mg/L	Report		1/Quarter	Composite [7]
pH [8]	SU	Report		1/Quarter	Composite [7]
Specific Conductance [8]	µmhos/cm	Report		1/Quarter	Composite [7]
Total Solids [8]	mg/L	Report		1/Quarter	Composite [7]
Ammonia [8]	mg/L	Report		1/Quarter	Composite [7]
Total Organic Carbon [8]	mg/L	Report		1/Quarter	Composite [7]
Total Residual Chlorine [8]	mg/L	Report		1/Quarter	Composite [7]
Dissolved Oxygen [8]	mg/L	Report		1/Quarter	Composite [7]
Total Cadmium [8]	mg/L	Report		1/Quarter	Composite [7]
Total Chromium [8]	mg/L	Report		1/Quarter	Composite [7]
Total Lead [8]	mg/L	Report		1/Quarter	Composite [7]
Total Copper [8]	mg/L	Report		1/Quarter	Composite [7]
Total Zinc [8]	mg/L	Report		1/Quarter	Composite [7]
Total Nickel [8]	mg/L	Report		1/Quarter	Composite [7]
Total Aluminum [8]	mg/L	Report		1/Quarter	Composite [7]
Total Magnesium [8]	mg/L	Report		1/Quarter	Composite [7]
Total Calcium [8]	mg/L	Report		1/Quarter	Composite [7]

See pages 24-25 for explanation of footnotes.

Footnotes:

1. Only "minimal contaminated groundwater" is permitted to be discharged, commingled with the other discharge flows authorized above. This discharge of contaminated groundwater must be eliminated to the maximum extent practicable. Therefore, "minimal" discharges are those that it was impracticable to eliminate.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the site through the outfall, prior to mixing with the receiving waters. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit. Samples shall be taken during dry weather conditions. Dry weather conditions are defined as any time which is not wet weather.

3. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of four (4) discharge events in each calendar year, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. Quarterly sampling shall be performed concurrently with the monthly monitoring event. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

4. Required for state certification.

5. The permittee shall conduct quarterly chronic (and modified acute) toxicity tests. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the inland silverside, *Menidia beryllina*, and sea urchin, *Arbacia punctulata*. Toxicity test samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th, and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. The tests must be performed in accordance with test procedures and protocols specified in Attachment 1 of the permit.

   After submitting WET test results for at least one year, and a minimum of four consecutive sets of WET test results demonstrating no toxicity, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

6. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment 1 (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the *Self-Implementing Alternative Dilution Water Guidance* which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs),* which may be found on the EPA, Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment 1. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment 1.

7. A composite sample shall consist of a minimum of eight (8) grab samples of equal volume collected at equal intervals during a 24-hour period and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period. In the event that the discharge does not last 24 hours, sample at hourly intervals for the length of time of the discharge, not to be less than 4 hours (i.e., no less than four samples).

8. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Total Ammonia Nitrogen as Nitrogen, Alkalinity, pH, Specific Conductance, Total Solids, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Total Recoverable Aluminum, Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Zinc, Total Recoverable Magnesium, and Total Recoverable Calcium found in the 100 percent effluent sample. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report. These samples, taken in accordance with the WET testing requirements, may be used to satisfy other sampling requirements as specified in the table above.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

5. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge wet weather flows consisting of stormwater (commingled with minimal contaminated groundwater infiltration[1]) through **Outfall Serial Number 018B (Power Plant)** to the Saugus River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2,3]	
		Average Monthly	Maximum Daily	Measurement Frequency [4]	Sample Type
Flow	MGD	Report	Report	1/Month	Estimate
pH [5]	SU	----	6.5 – 8.5	1/Month	Grab
Temperature	°F	Report	Report	1/Week	Grab
Oil and Grease (O&G)	mg/L	Report	15	1/Month	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab
Polychlorinated Biphenyls (PCBs)	µg/L	Report	Report	1/Month	Grab
Polycyclic Aromatic Hydrocarbons (PAHs)	µg/L	Report	Report	1/Month	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2,3]	
		Average Monthly	Maximum Daily	Measurement Frequency [4]	Sample Type
Metals					
Copper	µg/L	Report	Report	1/Month	Grab
Selenium	µg/L	Report	Report	1/Month	Grab
Arsenic	µg/L	Report	Report	1/Month	Grab
Aluminum	µg/L	Report	Report	1/Month	Grab
Cadmium	µg/L	Report	Report	1/Month	Grab
Chromium	µg/L	Report	Report	1/Month	Grab
Cobalt	µg/L	Report	Report	1/Month	Grab
Iron	µg/L	Report	Report	1/Month	Grab
Lead	µg/L	Report	Report	1/Month	Grab
Mercury	µg/L	Report	Report	1/Month	Grab
Titanium	µg/L	Report	Report	1/Month	Grab
Zinc	µg/L	Report	Report	1/Month	Grab
Total Volatile Organic Compounds (VOCs)	µg/L	Report	Report	1/Quarter	Grab
Total BTEX	µg/L	Report	Report	1/Quarter	Grab
Benzene	µg/L	Report	Report	1/Quarter	Grab
Toluene	µg/L	Report	Report	1/Quarter	Grab
Ethylbenzene	µg/L	Report	Report	1/Quarter	Grab
Total Xylenes	µg/L	Report	Report	1/Quarter	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2,3]	
		Average Monthly	Maximum Daily	Measurement Frequency [4]	Sample Type
Whole Effluent Toxicity (WET)					
Acute LC_{50} [6,7]	%	Report		1/Quarter	Composite [8]
Chronic C-NOEC [6,7]	%	Report		1/Quarter	Composite [8]
Hardness [9]	mg/L	Report		1/Quarter	Composite [8]
Alkalinity [9]	mg/L	Report		1/Quarter	Composite [8]
pH [9]	SU	Report		1/Quarter	Composite [8]
Specific Conductance [9]	µmhos/cm	Report		1/Quarter	Composite [8]
Total Solids [9]	mg/L	Report		1/Quarter	Composite [8]
Ammonia [9]	mg/L	Report		1/Quarter	Composite [8]
Total Organic Carbon [9]	mg/L	Report		1/Quarter	Composite [8]
Total Residual Chlorine [9]	mg/L	Report		1/Quarter	Composite [8]
Dissolved Oxygen [9]	mg/L	Report		1/Quarter	Composite [8]
Total Cadmium [9]	mg/L	Report		1/Quarter	Composite [8]
Total Chromium [9]	mg/L	Report		1/Quarter	Composite [8]
Total Lead [9]	mg/L	Report		1/Quarter	Composite [8]
Total Copper [9]	mg/L	Report		1/Quarter	Composite [8]
Total Zinc [9]	mg/L	Report		1/Quarter	Composite [8]
Total Nickel [9]	mg/L	Report		1/Quarter	Composite [8]
Total Aluminum [9]	mg/L	Report		1/Quarter	Composite [8]
Total Magnesium [9]	mg/L	Report		1/Quarter	Composite [8]
Total Calcium [9]	mg/L	Report		1/Quarter	Composite [8]

See page 29-30 for explanation of footnotes.

Footnotes:

1. Only "minimal contaminated groundwater" is permitted to be discharged, commingled with the other discharge flows authorized above. This discharge of contaminated groundwater must be eliminated to the maximum extent practicable. Therefore, "minimal" discharges are those that it was impracticable to eliminate.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the site through the outfall, prior to mixing with the receiving waters. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit.

3. Samples shall be taken during wet weather conditions, at least 72 hours from the previously measurable (i.e., greater than 0.1 inch rainfall) wet weather event. Grab sample(s) shall be taken during the first thirty minutes of the discharge. If collection of grab sample(s) during the first thirty minutes is impracticable, grab sample(s) shall be taken as soon after that as possible, and the permittee shall submit with the monitoring report a description of why the collection of the grab sample(s) during the first thirty minutes was impracticable. When a permittee is unable to collect grab sample(s) due to adverse climatic conditions, the permittee must submit in lieu of sampling data a description of why the grab sample(s) could not be collected, including available documentation of the event. Adverse weather conditions which may prohibit the collection of sample(s) include weather conditions that pose a danger to personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of sample(s) impracticable (drought, extended frozen conditions, specified storm event did not occur during sampling period, etc.) A "no discharge" report shall be submitted for those sampling periods in which there is no discharge.

4. Sampling frequency of 1/month is defined as the sampling of <u>one</u> (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of <u>four</u> (4) discharge events in each calendar year, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. Quarterly sampling shall be performed concurrently with the monthly monitoring event. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

5. Required for state certification.

6. The permittee shall conduct quarterly chronic (and modified acute) toxicity tests. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the inland silverside, *Menidia beryllina*, and sea urchin, *Arbacia punctulata*. Toxicity test samples shall be collected and tests completed during the calendar quarters ending March 31st, June 30th, September 30th, and December 31st each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. The tests must be performed in accordance with test procedures and protocols specified in Attachment 1 of the permit.

   After submitting WET test results for at least one year, and a minimum of four consecutive sets of WET test results demonstrating no toxicity, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

7. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment 1 (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the *Self-Implementing Alternative Dilution Water Guidance* which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA, Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment 1. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment 1.

8. A composite sample shall consist of a minimum of eight (8) grab samples of equal volume collected at equal intervals during a 24-hour period and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period. In the event that the discharge does not last 24 hours, sample at hourly intervals for the length of time of the discharge, not to be less than 4 hours (i.e., no less than four samples).

9. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Total Ammonia Nitrogen as Nitrogen, Alkalinity, pH, Specific Conductance, Total Solids, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Total Recoverable Aluminum, Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Zinc, Total Recoverable Magnesium, and Total Recoverable Calcium found in the 100 percent effluent sample. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report. These samples, taken in accordance with the WET testing requirements, may be used to satisfy other sampling requirements as specified in the table above.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

6. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge dry weather flows consisting of boiler startup/soot blower drains/boiler draining for maintenance, boiler filter backwash and ion exchange regeneration and backwash, de-aerator storage tanks, and boiler blowdown through **Internal Outfall Serial Number 018C (Power Plant)** to the Saugus River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [1, 2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Flow	MGD	Report	Report	1/Month	Estimate
pH	SU	6.0-9.0		1/Month	Grab
Oil and Grease (O&G)	mg/L	15	20	1/Month	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Month	Grab

See page 32 for explanation of footnotes.

Footnotes:

1. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the flow through the internal outfall, prior to mixing with any other discharge through Outfall 018. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit. If collection of a single representative sample of the flows through Outfall 018C is impracticable, collect the samples independently and report the results seperately on the DMR.

2. Samples shall be taken during dry weather conditions. Dry weather conditions are defined as any time which is not wet weather. Grab sample(s) shall be taken during the first thirty minutes of the discharge. If collection of grab sample(s) during the first thirty minutes is impracticable, grab sample(s) shall be taken as soon after that as possible, and the permittee shall submit with the monitoring report a description of why the collection of the grab sample(s) during the first thirty minutes was impracticable. When a permittee is unable to collect grab sample(s) due to adverse climatic conditions, the permittee must submit in lieu of sampling data a description of why the grab sample(s) could not be collected, including available documentation of the event. Adverse weather conditions which may prohibit the collection of sample(s) include weather conditions that pose a danger to personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of sample(s) impracticable (drought, extended frozen conditions, specified storm event did not occur during sampling period, etc.) A "no discharge" report shall be submitted for those sampling periods in which there is no discharge.

3. Sampling frequency of 1/month is defined as the sampling of <u>one</u> (1) discharge event in each calendar month, when discharge occurs. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

7. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge unused river water (commingled with minimal contaminated groundwater infiltration[1]) through **Outfall Serial Number 020** to the Saugus River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of applicable Massachusetts Surface Water Quality Standards.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Flow	MGD	16.9	Report	1/Quarter	Estimate
pH [4]	SU	----	6.5 – 8.5	1/Quarter	Grab
Oil and Grease (O&G)	mg/L	Report	15	1/Quarter	Grab
Total Suspended Solids (TSS)	mg/L	30	100	1/Quarter	Grab
Total Volatile Organic Compounds (VOCs)	µg/L	Report	Report	1/Quarter	Grab
Polychlorinated Biphenyls (PCBs)	µg/L	Report	Report	1/Quarter	Grab
Polycyclic Aromatic Hydrocarbons (PAHs)	µg/L	Report	Report	1/Quarter	Grab

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements [2]	
		Average Monthly	Maximum Daily	Measurement Frequency [3]	Sample Type
Metals					
Aluminum	mg/L	Report		Report	1/Month
Antimony	mg/L	Report		Report	1/Month
Arsenic	mg/L	Report		Report	1/Month
Cadmium	mg/L	Report		Report	1/Month
Copper	mg/L	Report		Report	1/Month
Iron	mg/L	Report		Report	1/Month
Selenium	mg/L	Report		Report	1/Month

See page 35 for explanation of footnotes.

Footnotes:

1. Only "minimal contaminated groundwater" is permitted to be discharged, commingled with the other discharge flows authorized above. This discharge of contaminated groundwater must be eliminated to the maximum extent practicable. Therefore, "minimal" discharges are those that it was impracticable to eliminate.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the site through the outfall, prior to mixing with the receiving waters. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit.

3. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of four (4) discharge events in each calendar year, when discharge occurs. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. Quarterly sampling shall be performed concurrently with the monthly monitoring event. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

4. Required for state certification.

Part I.A (continued)

8. Discharges from Internal Outfall 032 directly to the receiving water are prohibited.

9. Discharges through Outfalls 003 and 005 are prohibited.

10. Discharges through Outfall 029 (Gear Plant) are prohibited.

11. Dry weather discharges through the Drainage System Outfalls (Outfall Serial Numbers 001, 007, 010, 019, 027B, 028, 030, and 031) are prohibited.

12. Discharges of drainage system cleaning water directly to the receiving water are prohibited. All drain system cleaning water shall be transferred offsite or to the CDTS for treatment.

13. The permittee shall properly operate and maintain all treatment systems.

14. The discharge of non-stormwater flows is prohibited except to the extent such discharges are authorized above, or except to the extent such discharges comply with the "bypass" or "upset" conditions as described in Standard Conditions, Parts II.B.4 and II.B.5 of the permit.

15. The discharge of contaminated groundwater directly to the receiving water must be eliminated to the maximum extent practicable.

16. Discharge of wash water containing detergents is prohibited.

17. The use of detergents and/or solvents in Drainage System Cleaning process is prohibited.

18. The discharge shall not cause objectionable discoloration of the receiving waters.

19. The effluent shall not contain a visible oil sheen, foam, or floating solids at any time.

20. The use of oil-based anti-foam agents, such as Foamtrol AF2290, is prohibited.

21. The results of sampling for any parameter above its required frequency must also be reported.

22. The discharge shall not contain materials in concentrations or combinations which are hazardous or toxic to human health, aquatic life of the receiving surface waters or which would impair the uses designated by its classification.

23. EPA may modify this permit in accordance with EPA regulations in 40 Code of Federal Regulations (CFR) §122.62 and §122.63 to incorporate more stringent effluent limitations, increase the frequency of analyses, or impose additional sampling and analytical requirements.

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

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

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

        (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrite; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

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

        (4) Any other notification level established by the Director in accordance with 40 C.F.R.§122.44(f).

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

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

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

        (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.§122.21(g)(7).

        (4) Any other notification level established by the Director in accordance with 40 C.F.R.§122.44(f).

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

25. Toxics Control

    a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

    b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

B. STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

1. The permittee shall develop, implement, and maintain a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce, or prevent, the discharge of pollutants in stormwater to the receiving waters identified in this permit. The SWPPP shall be a written document that is consistent with the terms of this permit. Additionally, the SWPPP shall serve as a tool to document the permittee's compliance with the terms of the permit. The recommended format for the SWPPP is available on the EPA website for the Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activities (http://cfpub.epa.gov/npdes/stormwater/msgp.cfm).

2. The SWPPP shall be completed or updated and certified by the permittee within 90 days after the effective date of this Permit. The permittee shall certify that the SWPPP has been completed or updated, that it meets the requirements of the permit, and that it reduces the pollutants discharged in stormwater to the extent practicable. The certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of this initial certification shall be sent to EPA and MassDEP within one hundred and twenty (120) days of the effective date of the Permit.

3. The SWPPP shall be prepared in accordance with good engineering practices and shall be consistent with the general provisions for SWPPPs included in the most current version of the MSGP. In the current MSGP (effective May 27, 2009), the general SWPPP provisions are included in Part 5. Specifically, the SWPPP shall document the selection, design, and installation of control measures and contain the elements listed below:

    a. A pollution prevention team with collective and individual responsibilities for developing, implementing, maintaining, revising and ensuring compliance with the SWPPP.
    b. A site description which includes the activities at the facility; a general location map showing the facility, receiving waters, and outfall locations; and a site map showing the extent of significant structures and impervious surfaces, directions of stormwater flows, and locations of all existing structural control measures, stormwater conveyances, pollutant sources (identified in Part 3.c. below), stormwater monitoring points, stormwater inlets and outlets, and industrial activities exposed to precipitation such as, storage, disposal, material handling.
    c. A summary of all pollutant sources which includes a list of activities exposed to stormwater, the pollutants associated with these activities, a description of where spills have occurred or could occur, a description of non-stormwater discharges, and a summary of any existing stormwater discharge sampling data.
    d. A description of all stormwater controls, both structural and non-structural.
    e. A schedule and procedure for implementation and maintenance of the control measures described above and for the quarterly inspections and best management practices (BMPs) described below.

4. The SWPPP shall include best management practices (BMPs) appropriate for the facility that will minimize the discharge of pollutants in stormwater to waters of the United States. At a minimum, these BMPs shall be consistent with the control measures described in the most current version of the MSGP. In the current MSGP (effective May 27, 2009), these control measures, which are non-numeric technology-based effluent limitations, are described in Part 2. Specifically, BMPs must include the following elements:

   a. Minimizing exposure of manufacturing, processing, and material storage areas to stormwater discharges.
   b. Good housekeeping measures designed to maintain areas that are potential sources of pollutants.
   c. Preventative maintenance programs to avoid leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters.
   d. Spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur.
   e. Erosion and sediment controls designed to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants.
   f. Runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff.
   g. Proper handling procedures for salt or materials containing salt that are used for deicing activities.

5. All areas identified in the SWPPP shall be inspected, at least on a quarterly basis. Inspections shall begin during the 1st full quarter after the effective date of the permit. EPA considers quarters as follows: January to March; April to June; July to September; and October to December.

6. The permittee shall amend and update the SWPPP within 14 days of any changes at the facility that result in a significant effect on the potential for the discharge of pollutants to the waters of the United States. Such changes may include, but are not limited to: a change in design, construction, operation, or maintenance, materials storage, or activities at the facility; a release of a reportable quantity of pollutants as described in 40 CFR §302; or a determination by the permittee or EPA that the SWPPP appears to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with industrial activity. Any amended or new versions of the SWPPP shall be re-certified and signed by the permittee in accordance with the requirements identified in 40 CFR §122.22

7. The permittee shall certify at least annually that the previous year's inspections and maintenance activities were conducted, results were recorded, records were maintained, and that the facility is in compliance with the SWPPP. If the facility is not in compliance with any aspect of the SWPPP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in 40 CFR §122.22. The permittee shall

keep a copy of the current SWPPP and all SWPPP certifications (the initial certification, re-certifications, and annual certifications) signed during the effective period of this permit at the facility and shall make it available for inspection by EPA and MassDEP. In addition, the permittee shall document in the SWPPP any violation of numerical or non-numerical stormwater effluent limits with a description of the corrective actions taken.

8. The SWPPP shall also include the following site specific best management practices (BMPs):
   a. Form a team of qualified facility personnel who will be responsible for developing and updating the SWPPP and assisting the plant manager in its implementation.
   b. Assess the potential stormwater pollution sources.
   c. Select and implement appropriate management practices and controls for these potential pollution sources.
   d. Reevaluate, periodically, the effectiveness of the SWPPP in preventing stormwater contamination and in complying with the various terms and conditions of the draft permit.

9. The permittee shall develop and implement a plan for controlling infiltration of groundwater and inflow of non-allowable non-stormwater flows to the Drainage System. The plan shall be submitted to EPA and MassDEP **within six (6) months of the effective date of this permit**. The plan shall include an ongoing program to identify and remove sources of infiltration and inflow, and an inflow identification and control program that focuses on the disconnection and redirection of non-allowable non-stormwater flows. A summary report of all actions taken to minimize infiltration and inflow during the previous calendar year shall be submitted to EPA and MassDEP annually, by March 31st. The summary report shall, at a minimum, include: a map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year; a map with areas identified for infiltration and inflow investigation/action in the coming year; and a calculation of the annual average infiltration and inflow and the maximum monthly infiltration and inflow for the reporting year.

10. Additionally, the draft permit requires development and implementation of the following site-specific BMPs, at a minimum:
   a. The permittee shall eliminate all discharges during dry weather[1] through the Drainage System Outfall vaults (Outfall Serial Numbers 001, 007, 010, 019, 027B, 028, 030, and 031). To achieve this, the permittee shall develop and implement the following BMPs, at a minimum:
      i. The Drainage System Outfall gates shall only open during wet weather[2], after the first flush of pollutants (along with non-stormwater flows in the vaults) has been transferred to the CDTS for treatment.

[1] For the purposes of this permit, at any time weather conditions are considered either "wet weather" conditions or "dry weather" conditions. Dry weather is any time which is not wet weather.
[2] For the purposes of this permit, at any time weather conditions are considered either "wet weather" conditions or "dry weather" conditions. Wet weather is defined as any time period that begins with an hour that received 0.1 inches or more of rainfall (or equivalent precipitation) and continues until two hours past the last hour that precipitation is recorded. Dry weather is any time which is not wet weather.

ii. The Drainage System Outfall gates shall remain closed, and without leaks, during all periods of dry weather.

b. The permittee shall eliminate, to the maximum extent practicable, the discharge of non-stormwater flows (other than "allowable non-stormwater flows")[3] either alone or commingled with stormwater directly to the receiving water. To achieve these two objectives, the permittee shall implement all practicable steps including, but not limited to, the following BMPs:
   i. Reconfigure the vault system to ensure that during dry weather all flows in the Drainage System are transferred to the CDTS for treatment prior to discharge.
   ii. Operate the Drainage System vaults, outfalls and pumps so that the first-flush of stormwater flow (first 30 minutes of stormwater flow) commingled with dry weather flow (including contaminated groundwater) is not discharged directly to the Saugus River and is, instead, conveyed to the CDTS for treatment. If the permittee determines that this is presently infeasible due to capacity limitations of the system, then the permittee must evaluate what steps would be needed to make it feasible, including increasing pumping capacity, storage capacity and/or the treatment capacity of the CDTS, or reducing sources of infiltration to the system to free up existing capacity. Such evaluation must be submitted to EPA and the MassDEP for review annually, due by March 31st each year.
   iii. Manually operate the transfer pumps in all eight vaults during the days leading up to a significant storm event to reduce the dry weather flows to a low level in the vaults and, as a result, to help eliminate, to the maximum extent practicable, the amount of non-allowable non-stormwater flows that are commingled with stormwater flows in the Drainage System vaults and discharged to the Saugus River from the the Drainage System Outfalls.
   iv. Evaluate the feasibility of operating the Drainage System Outfall vault gates so that they remain closed when the water reaches the high-high level in the vault, and the pumps continue to transfer the water to the CDTS for treatment, to the maximum extent practicable.
   v. Isolate each source of non-allowable non-stormwater flow, to the maximum extent practicable, and re-pipe it directly to the CDTS for treatment.

c. During wet weather conditions, during periods leading up to forecasted wet weather conditions, and whenever any outfall gate is open, eliminate, to the maximum extent practicable, the generation of non-allowable non-stormwater flows that would be discharged from the Drainage System Outfalls (Outfall Serial Numbers 001, 007, 010, 019, 027B, 028, 030, and 031). To satisfy this requirement, the following discharges are prohibited:
   i. Intermittent discharges during wet weather and during periods leading up to forecasted wet weather conditions. Intermittent discharges consist of: de-aerator storage tanks, building 64-A sump, test cell washdown, stormwater collected in secondary containment dikes and truck loading areas, hydrant testing, sprinkler system testing water, stormwater dye tracing.
   ii. Any discharges from cleaning processes during wet weather, and during periods leading up to forecasted wet weather conditions. Such cleaning processes

[3] "Non-stormwater flows other than 'allowable non-stormwater flows'" are herein referred to as "non-allowable non-stormwater flows."

include, at a minimum, drain cleanouts (including drain system cleaning) and roof mounted air conditioner washing (no detergent).

iii. Any discharge of "blowdown" during wet weather and during periods leading up to forecasted wet weather conditions, to the maximum extent practicable. Blowdown consists of condensate blowdown, steam conduit blowdown, boiler blowdown, and cooling tower blowdown.

iv. Any discharge from routine maintenance that generates wastewater discharges during wet weather and during periods leading up to forecasted wet weather conditions, to the maximum extent practicable. Routine maintenance consists of: boiler startup/soot blower drains/boiler draining for maintenance (intermittent), boiler filter backwash, ion exchange regeneration and backwash.

v. Any discharge from any remaining non-allowable non-stormwater discharge flows during wet weather and during periods leading up to forecasted wet weather conditions, to the maximum extent practicable. These non-allowable non-stormwater flows include, at a minimum, potable water used upon NCCW system failure, steam conduit water, excavation dewatering, contaminated groundwater, and cooling water (not including the discharges of NCCW through Outfalls 014 and 018).

d. In the event of any generation of non-allowable non-stormwater flows during wet weather conditions, or during periods leading up to forecasted wet weather conditions (as identified immediately above in Parts i-v), the permittee shall record the type of flow generated, the corresponding weather conditions, the reason the flow was generated during wet weather conditions, and the fate of the non-stormwater flow in question. The permittee shall submit this information to EPA in an annual report, due by March 31st each year.

e. Eliminate the discharge of contaminated groundwater infiltration to the receiving water at Outfalls 014, 018, and 020. At a minimum, the permittee shall develop and implement the following site-specific BMPs:

i. Inspect outfall pipelines to determine the extent of contaminated groundwater infiltration to all outfalls which discharge directly to the receiving water, and upgrade or replace any leaking pipelines.

ii. Upgrade pipe lining integrity at pipes contributing to outfalls which are expected to discharge contaminated groundwater infiltration directly to the receiving water. The lining of the systems shall include complete internal sand blasting of the pipe, complete sealing of the internal structure with applied liquid sealant, installation of fiberglass type material, and a final layer of liquid finish coating.

iii. Or if pipeline rehabilitation is infeasible, develop and implement a plan for pipeline replacement.

iv. Provide an annual report on the progress of the pipe rehabilitation and replacement until the permittee certifies that no groundwater is discharged through Outfalls 014, 018, or 020. The annual report is due by March 31st each year.

f. Inspect all stormwater collected within the secondary containment areas at the jet fuel farm, around tanks, in the truck unloading ramps, in the Outfall 032 drainage area, and from other areas for evidence of an oil sheen or other contamination prior to such water being routed to the CDTS. In the event that a sheen is observed, the permittee

shall eliminate the sheen prior to discharging the water from the containment area or dispose of the water offsite.

g. Perform regular cleaning of the Drainage System pipelines. Dispose of all solids offsite which are accumulated as a result of the cleaning. Minimize the amount of solids left behind in the storm drains and dispose of all collected solids off-site in a manner that complies with federal, state and local laws, regulations and ordinances. Ensure all drainage system cleaning water is disposed of offsite or goes directly to the CDTS for treatment.
h. Ensure the sonic sensor in each outfall vault is operated normally so that the water level in the skimming chamber is never lower than the baffle designed to retain floating material for skimming. The permittee shall report any instances when this is not the case to EPA in an annual report, due by March 31st each year.
i. Develop and implement a written schedule for inspection and cleaning of all oil/water separators at each Drainage System Outfall vault on a regular basis.
j. Prior to washing roof mounted air conditioner (AC) units, inspect each AC unit for the presence of any visible oil and grease spots or spills. If any such oil and grease is found, manually remove according to normal spill clean-up protocol before any spray washing begins.
k. Containerize any wash water containing detergent and remove offsite for subsequent treatment or disposal.
l. Discharge of any water containing additives (except cooling water authorized for discharge through Outfall 018 or 014) is prohibited. Transfer any discharge containing additives (except cooling water authorized for discharge through Outfall 018 or 014) to the CDTS for treatment.
m. Develop and implement BMPs consistent with the sector specific BMPs included in Sector AB (Transportation equipment, industrial or commercial machinery) and Sector O (Steam Electric Generating Facilities) of the MSGP.

C. Cooling Water Intake Structure Requirements to Minimize Adverse Impacts from Impingement and Entrainment

The design, location, construction, and capacity of the permittee's CWISs shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts from the entrainment and impingement of fish eggs and larvae, as well as impingement of adult and juvenile fish, due to the CWISs. The following requirements have been determined by the EPA to represent the BTA for minimizing impingement and entrainment impacts at this facility:

1. Test Cell Intake

a. To minimize impingement the permittee shall improve the existing coarse mesh traveling screen with new fiberglass fish lifting buckets, a low pressure spraywash, separate fish and debris return troughs, and a new return trough that avoids high elevation drops and 90-degree turns, and that returns fish to a location that minimizes potential for re-impingement and is submerged at all tidal stages.

b. To minimize entrainment, the permittee shall operate the CWIS with an average monthly limit of 5 MGD from March 1 to July 31 and an average monthly limit of 27 MGD from August 1 to February 28.

2. Power Plant Intake

a. To minimize impingement mortality, the permittee shall reduce the through-screen velocity at any new or existing screening system to a level no greater than 0.5 fps.

b. To minimize entrainment, the permittee shall either:

a. Maintain a year-round monthly average intake flow of 28.7 MGD, commensurate with a 20% reduction in average monthly flow from the current permit; *and* install and operate a fine mesh wedgewire screen with a slot or mesh size no greater than 0.5 mm and a pressurized system to clear debris from the screens; *or*

b. Maintain a year-round maximum daily intake flow commensurate with the operation of a closed-cycle cooling system.

3. Any change in the location, design, or capacity of any CWIS must be approved in advance and in writing by the EPA and MassDEP.

D. BIOLOGICAL MONITORING PROGRAM

1. The permittee shall conduct entrainment and impingement monitoring at the Power Plant and Test Cell CWISs using the methods described below. Monitoring shall begin no later than ninety (90) days after the effective date of the permit.

a. During the operation of the Power Plant CWIS, entrainment monitoring shall be conducted weekly during the months of March through October, and twice per month during November, December, January and February. Three entrainment samples shall be collected each sampling week representing morning, afternoon and night (e.g. once on Monday morning at 8:00 am, once on Wednesday afternoon at 2:00 pm, and once on Friday night at 8:00 pm).

i. Entrainment samples shall be collected from the intake pipe if feasible, or from a representative location within the intake structure.

ii. Sampling shall be conducted using a 0.5-mm mesh, 60-cm diameter collection net with a flow meter mounted in the mouth of the net. Filtration volume shall be recorded for each event and each sample shall represent approximately 100 m^3 of water. After each sample, the collection nets shall be washed down and the sample transferred from the net to a jar containing sufficient formalin to produce a 5 to 10% solution.

iii. In the laboratory, all fish eggs and larvae shall be identified to the lowest distinguishable taxonomic category and counted.

iv. Ichthyoplankton counts shall be converted to densities per 100 m^3 based on the flow through the sampling net and the data shall be presented in the annual CWIS Biological Monitoring Report (BMR) detailed in Part D.1.d below.

Estimates of total numbers based on intake flow rates shall also be provided. Entrainment losses shall be converted from weekly estimates of density per unit volume, to monthly and yearly loss estimates based on the permitted flow at Outfall 018. In addition, loss estimates should be converted to adult equivalents for species for which regionally specific larval survival rates are available.

b. During the operation of the Test Cell CWIS, the permittee shall conduct impingement monitoring using the methods described below.

i. Impingement monitoring shall be conducted a minimum of once per week when the Test Cell CWIS is operating. To the maximum extent practicable, a sampling event shall consist of three, non-consecutive four (4) hour collections that represent morning, afternoon, and night (e.g. once on Monday morning at 8:00 am, once on Wednesday afternoon at 2:00 pm, and once on Friday night at 8:00 pm). The permittee may conduct fewer than three samples and/or consecutive 4-hour collections if the Test Cell CWIS does not operate long enough for three, non-consecutive collections to be sampled. In the event that fewer than three samples or in the event that consecutive samples are conducted, the permittee shall provide an explanation in the CWIS Biological Monitoring Report.

ii. Sampling shall be conducted using 3/8-inch (9.5 mm) stainless steel baskets placed in the screenwash return sluiceways. Each collection shall cover a period of at least four hours following an initial cleansing screenwash and the exact time period shall be recorded. To the extent practicable, the trash racks shall also be cleaned during each sampling period and its contents examined for any fish, mammals, reptiles or invertebrates.

iii. All fish will be immediately examined for initial condition (live, dead, injured). Any fish that is alive or injured at the time of collection shall be placed in a holding tank supplied with continuously running ambient seawater. Latent survival shall be determined after 48 hours.

iv. All fish shall be identified to the lowest distinguishable taxonomic category, counted, and measured (to the nearest mm total length) and the data shall be presented in the annual CWIS BMR. In the event of a large impingement event of a school of equivalently sized forage fish, a subsample of 50 fish can be taken for length measurements. Twenty-four hour and monthly totals shall be extrapolated and reported.

v. Annual impingement rates shall be extrapolated from the sampling events.

c. This CWIS biological monitoring shall be conducted for the duration of this permit to characterize impingement and entrainment before and after implementation of BTA at CWISs, unless authorization to discontinue or modify portions of the sampling program is granted by EPA and MassDEP.

d. A CWIS Biological Monitoring Report shall be submitted annually by March 31st. Each annual report shall provide a summary of the previous year's information in a narrative format. The report shall also include graphical representations, where appropriate, and all quality control procedures employed.

i. The annual report conclusions will indicate the trends of the various parameters analyzed and identify any anomalies that appear in the annual historical data comparison. These differences will be explained, if possible. The permittee will make recommendations for any remediation considered necessary or for any programs to better understand such anomalies.

ii. The annual report will provide the status of the present monitoring programs, the expected effort in the ensuing six months, and an alert to EPA and MassDEP of any anomalies or patterns that may be evident in the data collection.

e. The permittee is required to submit a written explanation if any aspect of the CWIS biological monitoring program is not conducted. The report shall be submitted as part of the Discharge Monitoring Report for the month the sampling was not conducted. The explanation for not monitoring must include all specific sampling activities that did not take place, along with the justification for suspending the identified sampling. This information also must be included in the annual BMR.

2. The permittee shall develop a bioaccumulation study to examine the bioaccumulation of metals, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) in blue mussels (*Mytilus edulis*) resulting from the discharge of stormwater comingled with infiltrated groundwater. The permittee shall submit the monitoring plan for review by EPA and MassDEP no later than six (6) months after the effective date of the permit. Unless otherwise notified by EPA and/or MassDEP, the permittee shall proceed with the monitoring plan during the 1st spring following submittal of the plan. The monitoring plan shall be consistent with the following requirements:

a. At a minimum, bioaccumulation shall be monitored at Outfalls 001, 019, and 028, as well as a reference site representative of ambient conditions in the Saugus River outside of the influence of the effluent plume.

b. Monitoring shall be conducted for one wet weather season during the first spring following submittal of the monitoring plan.

c. The monitoring plan shall be consistent with the methodology for mussel surveys in the Massachusetts Water and Sewer Association’s 2006-7 Combined Work/Quality Assurance Project Plan for Fish and Shellfish Monitoring (Report 2006-10) available

at http://www.mwra.state.ma.us/harbor/enquad/pdf/2006-10.pdf and/or the methodology used in the National Oceanographic and Atmospheric Administration's Mussel Watch Contaminant Monitoring Program at http://ccma.nos.noaa.gov/about/coast/nsandt/musselwatch.html.

d. A bioaccumulation study report shall be submitted no later than six (6) months following the completion of the survey. The report shall include all data collected as part of the bioaccumulation monitoring study and analysis of the tissue chemistry data (at a minimum, total PAHs, total PCBs, trace metals) at the outfalls compared to the reference site(s).

E. REOPENER CLAUSES

1. This permit shall be modified, or alternately, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

   a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. Controls any pollutants not limited in the permit.

F. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

   a. Submittal of Reports Using NetDMR

   NetDMR is accessed from: http://www.epa.gov/netdmr. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt out request").

   DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be

submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt Out Requests

Opt out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt out request and such request is approved by EPA. All opt out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following addresses:

Massachusetts Department of Environmental Protection - NERO
Bureau of Waste Prevention
205 Lowell Ave
Wilmington, MA 01887

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA and to MassDEP.

G. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of MassDEP pursuant to the Massachusetts Clean Waters Act, MGL c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 CFR 124.53, MGL c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

Attachment 2

River Works NPDES Outfalls/Intakes Map