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)

Bird, Inc. d/b/a Certainteed Corporation

is authorized to discharge from the facility located at

1077 Pleasant Street
Norwood, MA 02062

to receiving water named

Neponset River (MA73-01)
Boston Harbor Watershed

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.

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on September 20, 2005.

This permit consists of 20 pages in Part I including effluent limitations, monitoring requirements, 8 pages in Attachment A – Freshwater Acute Toxicity Test Procedure and Protocol (2011), and 25 pages in Part II, the Standard Conditions.

Signed this 13th day of January, 2015

/S/SIGNATURE ON FILE

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Region 1
Boston, MA

/S/SIGNATURE ON FILE

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, the Permittee is authorized to discharge treated contact cooling water through **Outfall Serial Number 001** to the Neponset River. The discharge shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitation		Monitoring Requirements[1]	
	Average Monthly	Maximum Daily	Measurement Frequency[2]	Sample Type[3]
Flow Rate[4]	0.04 MGD	Report MGD	Continuous	Meter
Total Flow[4]	Report MGal/Mo		When Discharging	Meter
Total Suspended Solids	40 mg/L and 46 lbs/day	70 mg/L and 68 lbs/day	Monthly	Grab
pH Range[5,6]	6.5-8.3 Standard Units		Weekly	Grab
Oil and Grease	----------	15 mg/L	Monthly	Grab
Temperature[7]	83° F	90° F	Weekly	Grab
Aluminum[8]	2.6 mg/L	Report mg/L	Weekly	Grab
Copper[9]	----------	Report mg/L	Monthly	Grab
Lead[10]	----------	Report mg/L	Monthly	Grab
Chlorine, Total Residual[11]	----------	Report mg/L	Monthly	Grab
WHOLE EFFLUENT TOXICITY[12,13,14]				
LC_{50}	Acute $LC_{50} \geq 100\%$		2/Year	Grab
Hardness	----------	Report mg/L	2/Year	Grab
Total Residual Chlorine	----------	Report mg/L	2/Year	Grab
Alkalinity	----------	Report mg/L	2/Year	Grab
pH	----------	Report SU	2/Year	Grab
Specific Conductance	----------	Report µmhos/cm	2/Year	Grab
Total Solids	----------	Report mg/L	2/Year	Grab
Total Dissolved Solids	----------	Report mg/L	2/Year	Grab
Ammonia	----------	Report mg/L	2/Year	Grab
Total Organic Carbon	----------	Report mg/L	2/Year	Grab

Cadmium	----------	Report mg/L	2/Year	Grab
Copper[9]	----------	Report mg/L	2/Year	Grab
Lead[10]	----------	Report mg/L	2/Year	Grab
Nickel	----------	Report mg/L	2/Year	Grab
Zinc	----------	Report mg/L	2/Year	Grab
Aluminum[8]	----------	Report mg/L	2/Year	Grab
Antimony	----------	Report mg/L	2/Year	Grab
Iron	----------	Report mg/L	2/Year	Grab
Manganese	----------	Report mg/L	2/Year	Grab
Chromium	----------	Report mg/L	2/Year	Grab
Calcium	----------	Report mg/L	2/Year	Grab
Magnesium	----------	Report mg/L	2/Year	Grab
Phosphorus	----------	Report mg/L	2/Year	Grab
WHOLE EFFLUENT TOXICITY TEST, RECEIVING WATER CHEMICAL ANALYSIS[15,16]				
Hardness	----------	Report mg/L	2/Year	Grab
Alkalinity	----------	Report mg/L	2/Year	Grab
pH	----------	Report SU	2/Year	Grab
Specific Conductance	----------	Report µmhos/cm	2/Year	Grab
Ammonia	----------	Report mg/L	2/Year	Grab
Total Organic Carbon	----------	Report mg/L	2/Year	Grab
Cadmium	----------	Report mg/L	2/Year	Grab
Copper[9]	----------	Report mg/L	2/Year	Grab
Lead[10]	----------	Report mg/L	2/Year	Grab
Nickel	----------	Report mg/L	2/Year	Grab
Zinc	----------	Report mg/L	2/Year	Grab
Aluminum[8]	----------	Report mg/L	2/Year	Grab
Antimony	----------	Report mg/L	2/Year	Grab
Iron	----------	Report mg/L	2/Year	Grab
Manganese	----------	Report mg/L	2/Year	Grab
Chromium	----------	Report mg/L	2/Year	Grab
Calcium	----------	Report mg/L	2/Year	Grab
Magnesium	----------	Report mg/L	2/Year	Grab
Phosphorus	----------	Report mg/L	2/Year	Grab

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater through the cylindrical overflow structure to **Outfall Serial Number 002** to the Neponset River. The discharge shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	**Discharge Limitation**		**Monitoring Requirements[1]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[2]**	**Sample Type[3]**
Flow Rate[4]	Report MGD	Report MGD	When Discharging	Estimate
Number of Events	Report		When Discharging	Count
pH Range[5,6]	6.5-8.3 Standard Units		Monthly	Grab
Total Suspended Solids	20 mg/L	30 mg/L	Monthly	Grab
WHOLE EFFLUENT TOXICITY[12,13,14]				
LC_{50}	Report %		2/Year	Grab
Hardness	----------	Report mg/L	2/Year	Grab
Total Residual Chlorine	----------	Report mg/L	2/Year	Grab
Alkalinity	----------	Report mg/L	2/Year	Grab
pH	----------	Report SU	2/Year	Grab
Specific Conductance	----------	Report µmhos/cm	2/Year	Grab
Total Solids	----------	Report mg/L	2/Year	Grab
Total Dissolved Solids	----------	Report mg/L	2/Year	Grab
Ammonia	----------	Report mg/L	2/Year	Grab
Total Organic Carbon	----------	Report mg/L	2/Year	Grab
Cadmium	----------	Report mg/L	2/Year	Grab
Copper[9]	----------	Report mg/L	2/Year	Grab
Lead[10]	----------	Report mg/L	2/Year	Grab
Nickel	----------	Report mg/L	2/Year	Grab
Zinc	----------	Report mg/L	2/Year	Grab
Aluminum[8]	----------	Report mg/L	2/Year	Grab
Antimony	----------	Report mg/L	2/Year	Grab
Iron	----------	Report mg/L	2/Year	Grab
Manganese	----------	Report mg/L	2/Year	Grab
Chromium	----------	Report mg/L	2/Year	Grab

Calcium	----------	Report mg/L	2/Year	Grab
Magnesium	----------	Report mg/L	2/Year	Grab
Phosphorus	----------	Report mg/L	2/Year	Grab
WHOLE EFFLUENT TOXICITY TEST, RECEIVING WATER CHEMICAL ANALYSIS[15,16]				
Hardness	----------	Report mg/L	2/Year	Grab
Alkalinity	----------	Report mg/L	2/Year	Grab
pH	----------	Report SU	2/Year	Grab
Specific Conductance	----------	Report µmhos/cm	2/Year	Grab
Ammonia	----------	Report mg/L	2/Year	Grab
Total Organic Carbon	----------	Report mg/L	2/Year	Grab
Cadmium	----------	Report mg/L	2/Year	Grab
Copper[9]	----------	Report mg/L	2/Year	Grab
Lead[10]	----------	Report mg/L	2/Year	Grab
Nickel	----------	Report mg/L	2/Year	Grab
Zinc	----------	Report mg/L	2/Year	Grab
Aluminum[8]	----------	Report mg/L	2/Year	Grab
Antimony	----------	Report mg/L	2/Year	Grab
Iron	----------	Report mg/L	2/Year	Grab
Manganese	----------	Report mg/L	2/Year	Grab
Chromium	----------	Report mg/L	2/Year	Grab
Calcium	----------	Report mg/L	2/Year	Grab
Magnesium	----------	Report mg/L	2/Year	Grab
Phosphorus	----------	Report mg/L	2/Year	Grab

3. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated stormwater through **Outfall Serial Number 003** to the Neponset River. The discharge shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	**Discharge Limitation**		**Monitoring Requirements[1]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[2]**	**Sample Type[3]**
Flow Rate[4]	----------	20 gpm	When Discharging	Estimate
Total Flow[4]	Report MGal/Mo		When Discharging	Meter
Number of Events	----------	Report	Monthly	Count
pH Range[5,6]	6.5-8.3 Standard Units		Monthly	Grab
Total Suspended Solids	10 mg/L	15 mg/L	Monthly	Grab
Oil and Grease	----------	15 mg/L	Monthly	Grab
Ammonia	----------	Report mg/L	2/Year	Grab
Phosphorus	----------	Report mg/L	2/Year	Grab

4. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated stormwater during through **Outfall Serial Number 004** to the Neponset River. The discharge shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	**Discharge Limitation**		**Monitoring Requirements[1]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[2]**	**Sample Type[3]**
Flow Rate[4]	----------	100 gpm	When Discharging	Estimate
Total Flow[4]	Report MGal/mo		When Discharging	Meter
Number of Events	----------	Report	Monthly	Count
pH Range[5,6]	6.5-8.3 Standard Units		Monthly	Grab
Total Suspended Solids	10 mg/L	15 mg/L	Monthly	Grab
Oil and Grease	----------	15 mg/L	Monthly	Grab
Ammonia	----------	Report mg/L	2/Year	Grab
Phosphorus	----------	Report mg/L	2/Year	Grab

Footnotes for Parts I.A.1 through 4:

[1]Sampling for effluent parameters shall be collected before the effluent mixes with any other waste stream or enters the Neponset River. Sampling for effluent parameters for Outfall 001 shall be conducted after treatment in the concrete settling pools. Sampling for effluent parameters for Outfall 002 shall be conducted after treatment in the detention pond at the cylindrical overflow structure, before the effluent mixes with stormwater from the municipal drainage system from Pleasant Street. Sampling for effluent parameters for Outfalls 003 and 004 shall be conducted after treatment in the oil/water separator before the effluent mixes with stormwater from other areas of the Facility. Only treated stormwater is permitted to be discharged through Outfall 003 and 004. All samples shall be tested in accordance with the procedures in 40 Code of Federal Regulations (CFR) §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. Any changes in sampling location must be approved in writing by EPA and MassDEP.

[2]Sampling frequency of continuous is defined as sampling of the effluent once per hour. Sampling frequency of weekly is defined as the sampling of one discharge event during every week of each calendar month when discharge occurs. Monthly is defined as the sampling of one discharge event in each calendar month, when discharge occurs. 2/Year sampling shall be performed concurrently with the monthly monitoring event during January through June, inclusive, and July through December, inclusive. If no qualifying event occurs in those months, then the biannual sample shall be collected during the next discharge event. If no discharge occurs during a monitoring period, the Permittee shall follow the No Data Indicator Code guidelines found in the *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region 1 web site at http://www.epa.gov/region1/enforcement/water/dmr.html.

[3]Grab samples shall be taken during the first 15 minutes of the initiation of the discharge where practicable, but in no case later than within the first hour of discharge. If collection of sample(s) during the first 15 minutes of discharge is impracticable, the Permittee shall submit a description of why the collection of the sample(s) during the first 15 minutes was impracticable.

[4]The flow rate for Outfalls 001 and 002 is to be measured in the units of million gallons per day (MGD), and Outfalls 003 and 004 in gallons per minute (gpm). The flow rate for Outfalls 001, 003 and 004 shall be based upon flow meter results from an approved flow measuring device collected at the same time and on the same day each week. The Permittee shall report total flow recorded by the flow meters for Outfalls 001, 003 and 004 in the units of million gallons per month (MGal/mo). The flow rate for Outfall 002 shall be an estimate based upon the duration of discharge and volume of the detention pond and/or appurtenances.

[5]Requirement for State Certification.

[6]The pH of the effluent shall be in the range of 6.5 to 8.3 standard units and not more than 0.5 standard units outside of the naturally occurring range. There shall be no change from natural background conditions that would impair any use assigned to the class of the receiving water.

[7]The temperature shall be collected for Outfall 001 at the same time and on the same day each week and in conjunction with flow rate, pH, and total recoverable aluminum measurements, above.

[8]The minimum level (ML) for total recoverable aluminum is defined as 20 µg/L using EPA approved methods found in 40 CFR §136. The ML is not the minimum level of detection, but rather the lowest point on the curve used to calibrate the test equipment for the pollutant of concern.

[9]Analysis must be completed for total recoverable copper using a detection limit for analysis equal to or lower than the hardness-based chronic criterion, 6 µg/L.

[10]Analysis must be completed for total recoverable lead using a detection limit for analysis equal to or lower than the hardness-based chronic criterion, 1.6 µg/L.

[11]The ML for Total Residual Chlorine (TRC) is defined as 20 µg/L using EPA approved methods found in 40 CFR §136. If EPA approves a more sensitive method of analysis for TRC, the permit may be modified to require the use of the new method with a corresponding lower ML. When reporting sample data at or below the ML, see the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)* for guidance.

[12]The Permittee shall conduct acute whole effluent toxicity (WET) tests twice per year following the effective date of the permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected for Outfall 001 and Outfall 002 during January through June, inclusive, and July through December, inclusive. The test results shall be submitted by the last day of the month following the completion of the test. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit. Following one year of the effective date of the permit *and* two tests, if toxicity is not indicated in the effluent for Outfall 002, additional WET testing is not required for Outfall 002. This elimination in testing does not apply to Outfall 001.

[13]The LC_{50} (Lethal Concentration 50 Percent) is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.

[14]For each WET test the Permittee shall report the concentrations of the parameters listed above found in the 100% effluent sample in Discharge Monitoring Reports (DMRs) submitted to EPA and MassDEP. 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 weekly and/or monthly sampling requirements specified in the table above as long as the timing of sampling for the remaining parameters in Part I.A.1. coincides with the 2/year WET test sampling.

[15]The dilution water sample for the WET tests shall be collected from the Neponset River at a point immediately upstream of Outfall 001's zone of influence at a reasonably accessible location. 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 A – Freshwater Acute 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 A. Any modification or revocation of this guidance will be transmitted to the permittees. However, at any time, the Permittee may choose to contact EPA Region 1 directly using the approach outlined in Attachment A. For each WET test the Permittee shall report the concentrations of the parameters listed above in DMRs submitted to EPA and MassDEP.

[16]In conjunction with each WET test, the Permittee shall report the concentrations of hardness, alkalinity, pH, specific conductance, ammonia, total organic carbon, total recoverable cadmium, total recoverable copper, total recoverable lead, total recoverable nickel, total recoverable zinc, and total recoverable aluminum found in the 100% effluent and receiving water control (0% effluent) samples in DMRs submitted to EPA and MassDEP, noted above as Whole Effluent Toxicity and Whole Effluent Toxicity Test, Receiving Water Chemical Analysis, respectively. Even where alternate dilution water has been agreed upon, the results of the receiving water control (0% effluent) analyses must be reported. Total residual chlorine, total solids and total dissolved solids must also be reported for 100% effluent. The ML for analysis shall be no greater than the following: 0.2 µg/L for total recoverable cadmium, 0.5 µg/L for total recoverable copper, total recoverable lead, and total recoverable nickel, and 5 µg/L for total recoverable zinc. When a receiving water control (0% effluent) is collected for both Outfall 001 and 002, a single Receiving Water Chemical Analysis is sufficient. Samples of 100% effluent and receiving water control (0% effluent) shall also be collected for analysis of total recoverable antimony, total recoverable iron, total recoverable manganese, total recoverable chromium, total recoverable calcium, total recoverable magnesium, and total phosphorus. Samples shall be collected as grab samples.

PART I.A. (continued)

5. The discharge shall not cause a violation of the Massachusetts water quality standards for the receiving waters.
6. The effluent shall not impart taste, turbidity, toxicity, radioactivity, or other properties which cause those waters to be unsuitable for the designated uses and characteristics ascribed to their use.
7. The effluent shall not cause objectionable discoloration of the receiving water.
8. The effluent shall contain neither a visible oil sheen, foam, nor floating or settleable solids at any time.
9. The effluent shall not contain materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving water.
10. The effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.
11. The Permittee shall attach a copy of the laboratory case narrative to the respective DMR form submitted to EPA and MassDEP for each sampling event reported or concurrent with the submittal of reports using NetDMR as detailed in Part I.E of this Permit. The laboratory case narrative shall include a copy of the laboratory data sheets for each analysis identifying the test method, the analytical results, and the detection limits for each analyte. The laboratory case narrative shall also provide a brief discussion of whether all appropriate QA/QC procedures were met and were within acceptable limits.
12. The Permittee shall report the results of sampling for any parameter above its required frequency, and any additional testing conducted that is beyond what is required herein, if the sampling and testing is conducted on an effluent in accordance with EPA approved methods consistent with the provisions of 40 CFR § 122.41(l)(4)(ii).
13. The Permittee shall properly operate and maintain all treatment systems and associated appurtenances.
14. The Permittee shall provide written notification to EPA and MassDEP of any changes in the operations at the Facility that may have an effect on the permitted discharge of process water or stormwater from the Facility, including changes that have the potential to cause flow through the treatment systems that exceed their maximum design flow rates or treatment capacity.
15. The Permittee shall not discharge any toxic pollutant or material including, but not limited to, chemicals (e.g., surfactants, disinfectant agents, detergents, emulsifiers), chemical additives, or bioremedial agents, including microbes, which was not reported in the permit application. Pollutants which are not limited by this permit, but which have been specifically disclosed in the permit application, may be discharged up to the frequency and level disclosed in the application, provided that such discharge does not violate Section 307 or 311 of the CWA or applicable state water quality standards.

16. The Permittee shall notify EPA and MassDEP at the addresses in Part I.E. when it proposes to add or replace any chemicals, chemical additives, or bioremedial agents that have the potential to come into contact with stormwater or enter the collection and treatment system.
17. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 CFR §122.42):
    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
        i. 100 micrograms per liter (µg/L);
        ii. 200 µg/L for acrolein and acrylonitrite; 500 µg/L for 2,4-dinitrophenol; and one milligram per liter (mg/L) for antimony;
        iii. Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
        iv. Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
    b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
        i. 500 micrograms per liter (µg/L);
        ii. One milligram per liter (1 mg/l) for antimony;
        iii. 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
        iv. Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
    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.
18. Numerical Effluent Limitations for Toxicants
    a. EPA or MassDEP may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR §122.
19. 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

promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

B. UNAUTHORIZED DISCHARGES

1. The Permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in Part I A.1 through 4 of this permit. Discharges of wastewater from any other point sources not authorized by this permit or other NPDES permits shall be reported in accordance with Part II (Standard Conditions), Section D.1.e.(1) of this permit (Twenty-four hour reporting).
2. Discharge of wash water containing detergents is prohibited.
3. Discharge of latex paint is prohibited.
4. Discharges from Outfall 002 via the emergency overflow slab are prohibited 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 below.
5. Discharges of untreated and/or non-stormwater flows from Outfalls 003 and 004 are 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 below.
6. At no time shall solids removed from stormwater treatment operations and solids control equipment cleaning be discharged to the Neponset River. The Permittee shall comply with all existing federal, state, and local laws and regulations that apply to the reuse or disposal of these solids.

C. REOPENER CLAUSE

This permit may be modified, or revoked and reissued in accordance with 40 CFR §122.62. The reason for modification or revocation may include, but is not limited to:

1. Material and substantial alterations or additions to the Facility or activity have occurred;
2. New information is received which was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance; or
3. An applicable effluent standard or limitation is issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, which:
    a. contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
    b. controls any pollutant not limited by this permit.

If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the CWA.

D. OTHER REQUIREMENTS

1. Stormwater Pollution Prevention Plan (SWPPP)
   a. The Permittee shall continue to implement, and maintain a SWPPP designed to reduce, or prevent, the discharge of pollutants in stormwater to the Neponset River. The SWPPP shall be a written document that is consistent with the terms of this permit and shall serve as a tool to document the Permittee's compliance with the terms of this permit. Development guidance and a recommended format for the SWPPP are 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).
   b. The SWPPP shall be updated and certified by the Permittee **within 30 days of the effective date of this permit**. The Permittee shall certify that its SWPPP has been updated and 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 60 days of the effective date of this permit**.
   c. 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 for the primary industrial category consistent with the operations at this facility are included in Part 8.D. Specifically, the SWPPP shall document the selection, design, and installation of control measures and contain the elements listed below:
      i. A pollution prevention team with collective and individual responsibilities for developing, implementing, maintaining, revising and ensuring compliance with the SWPPP;
      ii. 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 c. iii. below), stormwater monitoring points, stormwater inlets and outlets, and industrial activities exposed to precipitation such as, storage, disposal, material handling;
      iii. 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;
      iv. A description of all stormwater controls, both structural and non-structural;
      v. 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; and

vi. Sector specific SWPPP provisions included in Sector D – Asphalt Paving and Roofing Materials and Lubricant Manufacturing, subsector D1 – Asphalt Paving and Roofing Materials and Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products, subsector E3 – Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products.

d. The SWPPP shall document the appropriate BMPs implemented or to be implemented at the facility to minimize the discharge of pollutants in stormwater to waters of the United States and to satisfy the non-numeric technology-based effluent limitations included in this permit. 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 are described in Part 2.1.2. and Part 8.D. Specifically, BMPs must be selected and implemented to satisfy the following non-numeric technology-based effluent limitations:
   i. Minimizing exposure of manufacturing, processing, and material storage areas to stormwater discharges;
   ii. Good housekeeping measures designed to maintain areas that are potential sources of pollutants;
   iii. Preventative maintenance programs to avoid leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters;
   iv. Spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
   v. 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;
   vi. Runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
   vii. Proper handling procedures for salt or materials containing chlorides that are used for snow and ice control; and
   viii. Sector specific BMPs included in Sector D – Asphalt Paving and Roofing Materials and Lubricant Manufacturing.

e. The SWPPP must document the appropriate BMPs implemented or to be implemented (e.g., using a Standard Operating Procedure) that specifically satisfy the following site-specific, non-numeric technology-based effluent limitations:
   i. Sampling procedures to ensure consistent sample methods, consistent sample time and conditions, and sample collection location for each outfall consistent with the requirements of this permit, which meet adequate laboratory controls and/or appropriate quality assurance procedures included in Part II.B.1. and yield data representative of discharges from the Facility under authority of Section 308(a) in accordance with 40 CFR §122.41(j), §122.44(i), and §122.48;

ii. Material management procedures to describe the handling of water and/or solids removed from the treatment and control systems or related appurtenances during all types of maintenance activity;

iii. An inspection process that requires all areas with industrial materials or activities exposed to stormwater and all structural controls used to comply with effluent limits in this permit to be inspected at least once per quarter by qualified personnel with one or more members of the stormwater pollution prevention team. Inspections shall begin during the first full calendar quarter after the effective date of this permit. EPA considers quarters as follows: January to March; April to June; July to September; and October to December. Each inspection must include a visual assessment of stormwater samples (from the outfalls), which shall be collected within the first 15 minutes of discharge from a storm event, stored in a clean, clear glass or plastic container, and examined in a well-lit area for the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of pollution. The Permittee shall document the following information for each inspection and maintain the records along with the SWPPP:

1) The date and time of the inspection and at which any samples were collected;
2) The name(s) and signature(s) of the inspector(s)/sample collector(s);
3) If applicable, why it was not possible to take samples within the first 15 minutes;
4) Weather information and a description of any discharges occurring at the time of the inspection;
5) Results of observations of stormwater discharges, including any observed discharges of pollutants and the probable sources of those pollutants;
6) Any control measures needing maintenance, repairs or replacement; and
7) Any additional control measures needed to comply with the permit requirements.

iv. Solids minimization measures that optimize reduction in loading of settleable and/or suspended sediment, silt, solids and/or organic matter, including nutrients (i.e., nitrogen and phosphorus) from the facility to the Neponset River that shall include, at a minimum:

1) Evaluating and minimizing sources of solids that may come into contact with stormwater including, but not limited to, raw materials, in-process product or infrastructure, finished product and/or treatment systems;
2) Completing a loading analysis sufficient to quantify settleable and/or suspended sediment, silt, solids and/or organic matter loadings in the

facility as well as loadings to the receiving water; the evaluation shall be such that variations in loadings can be determined with a high degree of confidence;

3) Optimizing production and/or treatment processes with the current infrastructure and/or treatment system or with alterations, including adopting practices that implement and maintain solids removal; and
4) Incorporating nutrient reduction BMPs designed to reduce discharges of nitrogen and phosphorus, including the following: procedures to manage grass cuttings and leaf litter on the property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces; sweeping of paved surfaces at the facility at a minimum of two times per year, once in the spring (following winter activities such as sanding) and at least once in the fall (following leaf fall); and inspection and maintenance of catch basins to ensure that no sump shall be more than 50 percent full.

f. 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 BMPs included in the SWPPP appear to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with industrial activity.
g. Any amended, modified, 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. The Permittee shall also certify, at least annually, that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and that the facility is in compliance with this permit. If the facility is not in compliance with any aspect of this permit, 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 maintain at the facility a copy of its current SWPPP and all SWPPP certifications (the initial certification, re-certifications, and annual certifications) signed during the effective period of this permit, and shall make these available for inspection by EPA and MassDEP. In addition, the Permittee shall document in the SWPPP any violation of numeric or non-numeric stormwater effluent limits with a date and description of the corrective actions taken.
h. The SWPPP requirements for Outfalls 002, 003 and 004 authorized by this permit may be incorporated into any other existing SWPPP for the facility (i.e., a SWPPP prepared for MSGP permit coverage for discharges of stormwater associated with industrial

activity). However, where any provision that applies to outfalls authorized under this permit differs from the requirements of a SWPPP prepared to meet the requirements of the MSGP, the requirements in this permit shall take precedence.

E. MONITORING AND REPORTING

1. **For a period of six months 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 DMRs and other required reports via a secure internet connection. **Beginning no later than six months after the effective date of the permit**, the Permittee shall begin reporting using NetDMR, unless the Terminal 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:
        i. NetDMR is accessed from: http://www.epa.gov/netdmr. **Within six months 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 Terminal 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; and
        ii. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. A permittee submitting reports using NetDMR is no longer required to submit hard copies of DMRs or other reports to EPA, with the exception of a duplicate copy of the hydrostatic test summary letter/report noted below, and no longer required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Hydrostatic Test Summary Letter/Report, and Toxicity Test Results) to MassDEP until further notice from MassDEP.

    b. Submittal of NetDMR Opt-Out Requests:
        i. Opt-out requests must be submitted in writing to EPA for written approval at least 60 days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for 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 (OES04-1)
Boston, MA 02109-3912

And

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
1 Winter Street
Boston, Massachusetts 02108

c. Submittal of Reports in Hard Copy Form:
   i. Monitoring results shall be summarized for each calendar month and reported on separate hard copy DMRs postmarked no later than the 15th day of the month following the completed reporting period. All reports required under this permit shall be submitted as an attachment to the DMRs, with the exception of a duplicate copy of the hydrostatic test summary letter/report noted below. Signed and dated originals of the **DMRs, and all other reports or notifications DMRs (if opting out of NetDMR),** 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

   ii. Duplicate signed copies of **DMRs (if opting out of NetDMR), and all other reports or notifications** required above, shall be submitted to the State at the following address:

   Massachusetts Department of Environmental Protection
   Bureau of Resource Protection
   20 Riverside Drive
   Lakeville, MA 02347

iii. And, **WET test reports ONLY**, to the State at the following address:

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
8 New Bond Street
Worcester, Massachusetts 01606

d. Any verbal reports, if required in Parts I and/or II of this permit, shall be made to both EPA Region 1 and to MassDEP.

F. 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 the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 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 C.F.R. 124.53, M.G.L. 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.

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6^{o}C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-New England
5 Post Office Sq., Suite 100 (OEP06-5)
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
5 Post Office Sq., Suite 100 (OES04-4)
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcement/water/dmr.html *for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 ± 1^{o}C or 25 ± 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	≥ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

		series.
16.	Effect measured	Mortality-no movement of body or appendages on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19.	Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hr light, 8 hr dark
5.	Size of test vessels	250 mL minimum
6.	Volume of test solution	Minimum 200 mL/replicate
7.	Age of fish	1-14 days old and age within 24 hrs of each other
8.	No. of fish per chamber	10
9.	No. of replicate test vessels per treatment	4
10.	Total no. organisms per concentration	40
11.	Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12.	Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13.	dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC

15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16.	Effect measured	Mortality-no movement on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19.	Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 2340B (hardness by calculation)
     - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 4500-CL E Low Level Amperometric Titration
     - Method 4500-CL G DPD Colorimetric Method
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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NPDES PART II STANDARD CONDITIONS
(January, 2007)

PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

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

NPDES PART II STANDARD CONDITIONS
(January, 2007)

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

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

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can be reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

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

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

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

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

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

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

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

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

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

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) 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.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants", the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307 (a)(1) or, in the case of "sludge use or disposal practices" any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0003531

PUBLIC NOTICE START AND END DATES: May 30, 2014 – June 28, 2014

NAME AND MAILING ADDRESS OF APPLICANT:

Bird Incorporated d/b/a Certainteed Corporation
1077 Pleasant Street
Norwood, Massachusetts 02062

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Bird Incorporated d/b/a Certainteed Corporation
1077 Pleasant Street
Norwood, Massachusetts 02062

RECEIVING WATER(S): Neponset River (Segment MA73-01)
Boston Harbor Watershed

RECEIVING WATER CLASSIFICATION(S): B

SIC CODE(S): 2952 (Asphalt Felts and Coatings)
3295 (Minerals and Earths, Ground or Otherwise Treated)

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Attachment 7: Metals Analysis
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1. Proposed Action, Type of Facility, and Discharge Location

1.1 Proposed Action

The above applicant has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge treated contact cooling water, contact process water, noncontact cooling water, boiler condensate, boiler blowdown, and stormwater into the designated receiving water. Bird, Incorporated, which started business in papermaking in 1795 in Needham, Massachusetts, constructed the roofing plant located in Norwood, Massachusetts ("the Facility"), in 1904. Certainteed Corporation ("Certainteed") began operations at the Facility in 1998. The current permit ("2005 Permit"), issued on September 20, 2005, expired November 30, 2010. EPA received a completed permit renewal application from the facility dated May 20, 2010. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued pursuant to 40 CFR §122.6.

On January 12, 2012, EPA sent a letter pursuant to Section 308 of the Clean Water Act ("308 letter") requesting more information related to discharges from the Facility to the Neponset River (Segment MA73-01). Certainteed submitted the information requested in the 308 letter and additional information in three responses dated September 13, 2012, October 25, 2012, and November 30, 2012. The Draft Permit is based on the information provided in the application, and the additional information provided to EPA through the above mentioned correspondence. This information is part of the administrative file (Permit No. MA0003531).

1.2 Type of Facility

Certainteed manufactures and distributes fiberglass/asphalt roofing materials. Raw materials used at the Facility include fiberglass rolls, asphalt, rock granules, rock dust filler, sand, Mylar tape, latex paint, and biocide coating. The Facility produces its own ceramic-coated granules and solar-reflective granules. Raw materials used to produce granules include quarry rock, kaolin clay, inorganic pigments, and mineral oil. The Facility uses municipal water supplied by the Massachusetts Water Resources Authority ("MWRA").

1.3 Discharge Location

The Facility is located on an industrial site along Pleasant Street adjacent to the Neponset River in Norwood, Massachusetts (see Attachment 1). The portion of the Facility located on the north side of Pleasant Street consists of a roofing materials manufacturing building located in the central portion of the property (the "roofing plant"), covered storage and production buildings located roughly north and south of the roofing plant, an aboveground storage tank (AST) farm (the "tank farm"), an asphalt blow still AST farm (the "still yard"), and paved storage, parking and access areas. The portion of the Facility located on the south side of Pleasant Street consists of a granule processing plant (the "granule plant"), solar reflective granule manufacturing plant (the "Solaris plant"), a stone pile, an office building, a covered storage building, and paved parking and access areas. The Neponset River flows along the northern portion of the Facility property. The Facility is located downstream of Bird Pond and upstream of the confluence with Hawes Brook. The approximate latitude and longitude for each outfall is presented in Table 1. The site plan for the Facility is included in Attachment 2.

Table 1: Summary of Outfall Locations

Outfall Number	Latitude (degrees, minutes, seconds)	Longitude (degrees, minutes, seconds)
001	42° 10’ 10”	71° 12’ 22”
002	42° 10’ 7”	71° 12’ 20”
003	42° 10’ 8”	71° 12’ 26”
004	42° 10’ 7”	71° 12’ 23”

2. Description of Discharge

The 2005 permit authorized the discharge of process water, contact and noncontact cooling water, and stormwater runoff from Outfalls 001, 002, 003, and 004. The receiving water is the Neponset River, which flows from west to east along the northern edge of the Facility property. Outfall 001 consists of treated contact cooling water which overflows from a cooling water system used to cool asphalt-coated roofing shingles. Outfall 002 consists of treated contact process water (i.e., cleaning and dust control water), non-contact cooling water, boiler condensate, boiler blowdown, and stormwater from the granule plant which drains into the Facility’s stormwater system. Outfalls 003 and 004 consist of treated stormwater from the tank farm and still yard, respectively. Discharge monitoring data from January 1, 2009 through December 31, 2013 for Outfalls 001, 002, 003, and 004 are included in Attachment 3.

This permit does not address stormwater discharges from this site authorized under the Stormwater Multi-Sector General Permit for Industrial Activities (MSGP) with tracking number MAR05EA93.

3. Receiving Water Description

The Facility discharges to the Neponset River (Segment 73-01). This segment is 13.2 miles in length from the outlet of the Neponset Reservoir in Foxborough to the confluence with the East Branch of the Neponset River in Canton. The Facility is approximately one quarter mile upstream of the confluence between the Neponset River and Hawes Brook and just below the Bird Pond Dam. MassDEP classifies this segment of the Neponset River as Class B (warm water fishery)[1]. Class B waters are described in the Commonwealth of Massachusetts Water Quality Standards (314 CMR 4.05(3)(b)) as follows: *“designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment (Treated Water Supply). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.”* The Neponset River is part of the Boston Harbor watershed and flows into Dorchester Bay.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). The Neponset River segment MA73-01 is listed as a Category 5 “Waters Requiring a TMDL” on the

[1] http://www.mass.gov/dep/water/laws/tblfig.pdf

Massachusetts Year 2012 Integrated List of Waters (CWA Sections 303d and 305b)[2] for dichlorodiphenyltrichloroethane (DDT), *Escherichia coli* (*E. coli*), excess algal growth, dissolved oxygen (DO), polychlorinated biphenyls (PCBs) in fish tissue, phosphorus (total), sedimentation/siltation, total suspended solids (TSS), turbidity, and other (not specified). Former pond segments Crackrock Pond (MA73010) and Bird Pond (MA73002) are now included in this segment. The status of each designated use described in the Neponset River Watershed 2004 Quality Assessment Report (February 2010)[3] is presented in Table 2.

Table 2: Summary of Designated Uses for Neponset River Segment MA73-01

Designated Use	**Status**
Aquatic Life	Impaired
Aesthetics	Not Assessed
Primary Contact Recreation	Impaired
Secondary Contact Recreation	Support
Fish Consumption	Impaired

The Aquatic Life use is impaired in this segment based on eight of thirty samples collected at three sites in 2007 and 2008 which violated the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 2.3 mg/L to 4.9 mg/L. The Primary Contact Recreation use is impaired in this segment based on samples collected at three sites during the primary contact season in 2007 and 2008 which violated the geometric mean criterion for primary contact for *E. coli*. *E. coli* is a newly listed impairment proposed for coverage under a previously approved TMDL[4] (CN121.0). The Fish Consumption use is impaired in this segment based on MA DPH fish consumption advisories for the Neponset River due to PCBs and DDT.[5] The source for PCBs is identified as sediment. The Secondary Contact Recreation use is supported in this segment based on samples collected at three sites in 2007 and 2008 which were below the geometric mean criterion for secondary contact for *E. coli*. The Aesthetics use has not been assessed in this segment based on a lack of sufficient data.

The facility does not engage in activities that would be expected to generate a significant source of DDT, *E. coli*, or PCBs, noted above, since the majority of effluent consists of contact cooling water. However, EPA has included effluent limitations and/or monitoring requirements necessary to address discharges of TSS (including impairments resulting from sedimentation/siltation, TSS, and turbidity), and nutrients (including impairments resulting from excess algal growth, DO, and phosphorus).

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[2] Massachusetts Year 2012 Integrated List of Waters, Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; January 2012, Report Number CN400.0. http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf

[3] Neponset River Watershed 2004 Water Quality Assessment Report. MassDEP Division of Watershed Management, Worcester, Massachusetts; February 2010, Report Number: CN170.4. http://mass.gov/eea/docs/dep/water/resources/71wqar09/73wqar10.pdf

[4] This TMDL can be viewed at: http://www.mass.gov/eea/docs/dep/water/resources/n-thru-y/neponset.pdf

[5] Freshwater Fish Consumption Advisory List. Massachusetts Department of Public Health Bureau of Environmental Health; October 11, 2011.

4. Limitations and Conditions

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the Draft Permit (see Part 1, Effluent Limitations and Monitoring Requirements). The basis for the limits and other permit requirements are described below.

5. Permit Basis: Statutory and Regulatory Authority

5.1 General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits.

5.2 Technology Based Requirements

Subpart A of the 40 CFR §125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically available (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must have been complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit.

EPA has promulgated technology-based National Effluent Limitations Guidelines (ELGs) for BPT in 40 CFR §443.32 and for BAT in 40 CFR §443.33 for process wastewater in the Paving and Roofing Materials Point Source Category, Subpart C., Asphalt Roofing Subcategory for existing sources. In the absence of technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgment (BPJ).

5.3 Water Quality-Based Requirements

Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when technology-based limitations would interfere with the attainment or maintenance of water quality in the receiving water.

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards. Water quality standards consist of three parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, include these elements. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless site specific criteria are established.

The draft permit must limit any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard (40 CFR §122.44(d)). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential," EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's re-issuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

5.4 Anti-backsliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA [see Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)]. EPA's anti-backsliding provisions prohibit the relaxation of permit limits, standards, and conditions except under certain circumstances. Effluent limits based on BPJ, water quality, and state certification requirements must also meet the anti-backsliding provisions found at Section 402(o) and 303(d)(4) of the CWA.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2005 Permit. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

5.5 Anti-degradation

Federal regulations found at 40 CFR §131.12 require states to develop and adopt a statewide anti-degradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The Massachusetts Anti-degradation Regulations are found at 314 CMR 4.04. There are no new or increased discharges being proposed with this permit reissuance. Therefore, EPA does not believe that the MassDEP is required to conduct an anti-degradation review regarding this permit reissuance.

5.6 State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied. EPA permits are to include any conditions required in the state's certification as being necessary to ensure compliance with state water quality standards or other applicable requirements of state law. See CWA Section 401(a) and 40 CFR §124.53(e). Regulations governing state certification are set out at 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

6. Explanation of the Permit's Effluent Limitations

6.1 Facility Information

Certainteed manufactures fiberglass/asphalt roofing materials at the roofing plant by drawing fiberglass mat over a series of steel rollers. The fiberglass mat is heated, and hot asphalt mixed with limestone is applied to the front of the mat, followed by ceramic-coated, pigmented rock granules from the granule plant. Mylar tape and sand are applied to the back of the mat. The mat is then pressed through rolls, and cooled by closed loop non-contact cooling water inside the rolls and contact cooling water. Latex paint and/or biocide coating may be applied to select mats upon cooling.

After application, contact cooling water drains through metal grating beneath the production line to a 16" wide by 50' long by 9" to 18" deep pit, where a sand screw removes non-suspended sediment on a continuous basis to a hopper (approximately 50 ft^3 per day on average). The water, with suspended sediment, flows over a divider to a 3.08' by 4.167' by 2.54' pit. The water discharges from this pit by gravity overflow through a subsurface pipe to two rectangular 40' wide by 60' long by 12' deep concrete settling pools for treatment prior to discharge via Outfall 001. Each settling pool has a holding capacity of 215,000 gallons and a retention time of 5.3 days. The closed loop non-contact cooling water is cycled through four 6-foot fanned cooling towers, a baffle system, and pumped back to the roofing plant. Make up water is supplied by the MWRA.

Certainteed produces pigmented rock granules for use in its manufacturing process at the granule plant. The plant uses ¾ inch crushed stone from the Bird Quarry in Wrentham, Massachusetts. Crushed stone is processed through the plant via a conveyor system for drying, crushing, screening, pigmenting and firing. Finished granules are coated with mineral oil and transported via conveyor to

thirty eight storage silos at the roofing plant. When in operation, the average daily production at the granule plant is approximately 782,400 pounds of colored granules.

Contact process water is used at the granule plant for dust control and dust removal using potable water, without the use of abrasives or cleaning agents. This includes the use of seventeen sprinklers, a truck loading stall fitted with sprayers for stone dust wetting and hosing of equipment and buildings. This water comes in contact with stone dust in the air, on the ground, and on building surfaces. Non-contact cooling water used to cool compressors in the plant discharges intermittently when the equipment is in use. Boiler blowdown is generated during equipment safety testing and without use of boiler treatment chemicals. Boiler blowdown and boiler condensate from various steam lines and traps is drained onto the ground surface and sheet flows to catch basins adjacent to the granule plant. Stormwater runoff is collected in catch basins around the granule plant. Contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater from the granule plant drain to the Facility's storm drain system to a detention basin for treatment prior to discharge via Outfall 002. Contact cooling water and pigment mixing water used at the granule plant is recycled and does not discharge to Outfall 002.

Certainteed produces solar reflective granules at the Solaris plant by coating rock granules produced at the granule plant with solar-reflective material. When in operation, the maximum daily production at the Solaris plant is approximately 50,000 pounds of solar reflective granules. Certainteed indicated in its 308 letter response that there is no process wastewater discharged to waters of the United States from the Solaris plant.

A tank farm used to store asphalt products in aboveground storage tanks (ASTs) and still yard used to process and store asphalt products in ASTs are located adjacent to the roofing plant. Both the tank farm and still yard are out of doors and surrounded by water tight concrete dikes. The area inside the dikes of the tank farm and the still yard are pitched to sump pits containing manually-operated sump pumps. During a precipitation event, stormwater is pumped from the sump pits to oil/water separators (OWSs) for treatment.

6.2 Permitted Outfalls, Dilution Factor and Appropriate Measure of Production

6.2.1 Permitted Outfalls

The 2005 Permit allows discharges from Outfalls 001, 002, 003, and 004 to the Neponset River. The discharge from Outfall 001 consists of contact cooling water from the roofing fabrication process at the roofing plant. The discharge from Outfall 002 consists of contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater from the granule plant. The discharge from Outfall 003 consists of stormwater from the tank farm. The discharge from Outfall 004 consists of stormwater from the still yard.

Contact cooling water is treated through sedimentation in two concrete settling pools. The influent water travels down a channel between the pools and enters each pool at the end furthest from the Outfall 001 sampling location. Water passes through a turbidity curtain and beneath a surface skimmer in each pool. The overflow from each pool combines at the sampling location for Outfall 001 and discharges via the outfall pipe to the Neponset River. The sediment, consisting primarily of

granules, filler, and sand, is mechanically removed using a front end loader or similar equipment approximately once annually. The sediment removed from the settling pools is disposed of offsite. The trench and pit is cleaned approximately once per month and the material removed is dried prior to disposal offsite (approximately 107 ft^3 per month on average).

Contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater is treated through sedimentation in the detention basin associated with Outfall 002, located on the north side of Pleasant Street. The discharge waters enter the detention basin through a pipe at the end furthest from the cylindrical outlet structure and sampling location for Outfall 002. When the water level in the pond exceeds the elevation of the top of the outlet structure, it drains to a subsurface pipe and combines with municipal stormwater prior to discharging to the Neponset River. The facility reports that discharges to Outfall 002 are infrequent due to groundwater infiltration and evaporation. The sediment, consisting primarily of granule rock dust is mechanically removed using a front end loader or similar equipment when maintenance is completed. The sediment removed from the detention basin is transported as a solid waste and disposed of offsite.

Stormwater that accumulates inside the concrete dikes of the tank farm and still yard is treated through OWSs. The OWS in the tank farm is 5'7" long, 2'2" wide and 4' high and the transfer pump has a design flow capacity of 20 gallons per minute (gpm). The OWS in the still yard is 10' long, 2' wide and 6' high. Two transfer pumps are used for the still yard OWS with a total design flow capacity of 80 gpm. One pump with a design flow capacity of 20 gpm is used during normal precipitation events. The second pump has a design flow capacity of 60 gpm and is used if the design flow capacity of the first pump is exceeded. The treated stormwater from the tank farm and still yard comingles with additional stormwater prior to reaching the Neponset River via one or more outfalls in the Facility's storm drain system, which are covered by EPA's MSGP.

Attachment 4 includes flow diagrams of the processes contributing to the outfalls at the Facility. The Facility uses water supplied by the MWRA in the roofing plant closed loop non-contact cooling water system noted on the diagram. Water is not taken from the Neponset River for this use.

6.2.2 Dilution Factor

EPA calculates available dilution to determine water quality based limitations in a NPDES permit. 314 CMR 4.03(3)(a) requires that effluent dilution be calculated based on the receiving water's lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or the 7-day 10-year low flow (7Q10). EPA calculated the 7Q10 for the Neponset River at Outfall 001 based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gauging station to the Facility along the Neponset River (station number 01105000 at Norwood, MA[6]) and the estimated drainage area for the Facility using the USGS StreamStats for Massachusetts watershed delineation tool.[7] The 7Q10 flow obtained from the USGS was adjusted for the drainage area contributing to Outfall 001 (see Attachment 5). EPA used the maximum allowable discharge to calculate available effluent dilution.

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[6] USGS StreamStats National Data Collection Station Report for Station 01105000: http://streamstatsags.cr.usgs.gov/gagepages/html/01105000.htm

[7] USGS StreamStats for Massachusetts Interactive Map: http://water.usgs.gov/osw/streamstats/massachusetts.html

The average flow for Outfall 002 was not included in this calculation because from December 1, 2005 through September 30, 2012, this discharge occurred with low frequency (five discharge sample events were reported). Additionally, it is unclear at this time if discharges from Outfall 002 occur during dry weather or wet weather events, or if discharges may occur during both dry weather and wet weather. In the case of wet weather, this would indicate discharges from Outfall 002 consist primarily of stormwater with highly variable flows expected to occur with low frequency, small magnitude and short duration. The average flows for Outfalls 003 and 004 were also not combined for this calculation because discharges from these outfalls consist of stormwater runoff expected to occur with low frequency, small magnitude and short duration prior to entering the Neponset River.

The calculated dilution factor for the Facility is 55:1 (see Attachment 5).

6.2.3 Appropriate Measure of Production

In order to calculate technology-based effluent limitations using National ELGs for BPT in 40 CFR §443.32 and for BAT in 40 CFR §443.33 for process wastewater generated at the Facility, EPA determined the appropriate measure of production in accordance with 40 CFR §122.45(b)(2). Certainteed provided the total product produced per month and the number of production days each month from January 2006 through September 2012. EPA determined that the appropriate measure of production is the average pounds of product produced per day, calculated as follows:

$$\frac{\text{3,147,564,800 pounds produced}}{\text{1,300 production days}} = \text{2,421,204 pounds per day}$$

7. Derivation of Effluent Limits under the Federal CWA and the Commonwealth of Massachusetts' Water Quality Standards

7.1 Outfall 001

7.1.1 Flow

The 2005 Permit authorized a monthly average limit of 0.04 MGD and required reporting the daily maximum flow of treated contact cooling water through Outfall 001. From January 1, 2009 through December 31, 2013, the reported monthly average discharge from Outfall 001 ranged from 0 to 0.14 million gallons per day (MGD). The maximum daily flow reported was 0.19 MGD (190,000 gallons per day). The 2005 Permit average monthly flow limit was based on the design retention time in the settling pools of approximately 5.3 days. In order to maintain the associated level of treatment, the Draft Permit maintains the monthly average flow limit of 0.04 MGD (40,000 gallons per day) and continues to require reporting of the daily maximum flow.

7.1.2 Total Suspended Solids (TSS)

TSS discharged to receiving waters may contribute to turbidity, oxygen depletion, or loading of nutrients and other pollutants. From January 1, 2009 through December 31, 2013, daily maximum TSS concentrations reported ranged from 0.4 to 190 mg/L, and monthly average TSS concentrations reported range from 0.8 to 63.2 mg/L.

The 2005 Permit contained a maximum daily limit of 70 mg/L and a monthly limit of 40 mg/L for TSS. These limits were maintained to meet anti-backsliding requirements for limits established in the previous permit, issued September 30, 1997. The permit issued September 30, 1997 contained these limits, also based on meeting anti-backsliding requirements for limits established in the previous permit, issued June 24, 1975, and modified July 26, 1976 and January 9, 1979. The June 24, 1975 permit contained both production-normalized limits based on National ELGs in the Paving and Roofing Materials Point Source Category, Subpart C, Asphalt Roofing Subcategory and concentration-based maximum daily and monthly average limits of 70 mg/L and 40 mg/L, respectively, based on the treatment technology applied to the effluent. The permit modification of July 26, 1976 updated the production-normalized limits to account for increased production at the Facility. Therefore, EPA believes the carry-over of *only* concentration-based limits for TSS from the June 24, 1975 permit has been in error. EPA must establish technology-based limits for TSS under the ELGs based on the appropriate measure of production for the Facility. These limits are calculated using the appropriate measure of production in pounds produced per day and the applicable factor in pounds per 1,000 pounds produced as follows:

BPT:

Maximum Daily TSS:	2,421,204 pounds produced / day = 136 lbs/day	x	0.056 pounds / 1,000 pounds produced
Average Monthly TSS:	2,421,204 pounds produced / day = 92 lbs/day	x	0.038 pounds / 1,000 pounds produced

BAT:

Maximum Daily TSS:	2,421,204 pounds produced / day = 68 lbs/day	x	0.028 pounds / 1,000 pounds produced
Average Monthly TSS:	2,421,204pounds produced / day = 46 lbs/day	x	0.019 pounds / 1,000 pounds produced

Because the TSS limits calculated for BAT are more protective than BPT, the Draft Permit includes a maximum daily limit of 68 lbs/day and an average monthly limit of 46 lbs/day for TSS based on BAT limitations. The TSS limits included in the Draft Permit meet anti-backsliding requirements under the exception described in 40 CFR §122.44(l)(2)(i) since the omission of the mass-based limits were a technical mistake according to 402(a)(1)(b).

As described in Section 3 above, the Neponset River is impaired and requires a TMDL for sedimentation/siltation, TSS, and turbidity. There are no quantitative criteria for TSS in the Massachusetts WQSs; however, Massachusetts WQSs for Class B waters include a narrative criterion for solids which states "*These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom*" (see 315 CMR 4.05(3)(b)5). Accepting the support

determinations employed by MassDEP during the Neponset River Resource Assessment and Boston Harbor Hydrologic and Water Quality Investigation,[8] TSS levels greater than 80 mg/L have reasonable potential to cause or contribute to an excursion above the narrative WQC for Class B waters.

Given the impairment to the Neponset River and the concentrations of TSS measured in effluent from the Facility, the Draft Permit maintains the concentration-based limits for maximum daily and monthly average TSS of 70 mg/L and 40 mg/L, respectively. In addition, the Facility must incorporate solids minimization best management practices (BMPs) into its stormwater pollution prevention plan (SWPPP) for this outfall. Given that the concentration-based TSS limits are more restrictive than the concentration noted in the Neponset River Resource Assessment as an interpretation of the narrative criterion for solids, and in accordance with the exception to anti-backsliding under §402(a)(1)(b) for the mass-based TSS limits, EPA has concluded that concentrations of TSS in discharges from the Facility will not violate Massachusetts' WQSs. Further, these limits are sufficient to comply with the anti-degradation provisions in the Massachusetts WQSs and policy implementing these provisions.

7.1.3 pH

From January 1, 2009 through December 31, 2013, the pH values reported for Outfall 001 ranged from 6.5 SU to 8.0 standard units (SU). National ELGs for process water from asphalt roofing point sources (40 CFR §443.32 and §443.33) require effluent pH to be between 6.0 and 9.0 SU at all times. However, the Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)3, for Class B waters require pH to be within the range of 6.5 to 8.3 SU and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs.

7.1.4 Oil and Grease (O&G)

Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(7), state "*These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life."* A concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish (EPA Water Quality Criteria, 1972).

From January 1, 2009 through December 31, 2013, O&G levels have ranged from below the laboratory Practical Quantitation Limits (PQLs) to 4.8 mg/L at Outfall 001. The 2005 Permit included a daily maximum limit of 15 mg/L for O&G for this outfall. The Draft Permit maintains a maximum daily limit for O&G of 15 mg/L at this outfall to ensure compliance with Massachusetts WQSs. The monitoring frequency has been increased to monthly, to be consistent with other outfalls.

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[8] See *The Neponset River Watershed 1994 Resource Assessment Report*, Massachusetts Department of Environmental Protection office of Watershed Management (October 1995): 149 pp. and *Boston Harbor Hydrologic and Water Quality Investigation: Neponset Results*, Neponset River Watershed Association/DEP Project Number 00-07/MWI (June 2001): 107 pp.

7.1.5 Temperature

As described above, cooling water is used to spray asphalt coated roofing shingles and cool steel rollers during the manufacturing process. The portion used in the steel rollers re-circulates through two closed-cycle cooling fans at the Facility. The water sprayed on the asphalt shingles is discharged to the Neponset River through Outfall 001 after treatment in the settling pools. The 2005 Permit temperature limit was based on Massachusetts WQSs for class B waters (314 CMR 4.05(3)(b)) pertaining to warm water fisheries which states:

a. *"Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed…5°F (2.8°C) in rivers and streams designated as warm water fisheries (based on the minimum expected flow for the month);*" and
b. "*natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms."*

The 2005 Permit contained a daily maximum temperature limit of 90°F (32.2° C), and an average monthly temperature limit of 83°F (28.3° C). From January 1, 2009 through December 31, 2013, the maximum daily and average monthly temperature of the effluent has ranged from 36.5 to 85.5ºF and 31.7 to 79.5ºF, respectively.

EPA used a standard mixing equation to determine the instantaneous mixing expected in the Neponset River as a result of the discharge from Outfall 001 to verify that the discharge does not cause a temperature rise of greater than 5º F as required by Massachusetts WQSs (see Attachment 6). Based on this analysis, the temperature limit of 90º F included in the Draft Permit is not expected to cause or contribute to an increase in temperature of greater than 5º F in the Neponset River. In addition, the maximum proposed temperature of the discharge of 90º F is not expected to cause or contribute to a downstream temperature in the Neponset River greater than 83º F. Therefore, the Draft Permit maintains a daily maximum temperature limit of 90°F (32.2° C), and an average monthly temperature limit of 83°F (28.3° C). In the event that temperature monitoring data indicate conditions which violate Massachusetts WQS, the permit may be modified pursuant to 40 CFR §122.62.

7.1.6 Metals

Many types of metals are present in ground and surface waters around New England. Certain metals like copper, lead, and zinc can be toxic to aquatic life and are potentially harmful to plant and other animal species. Sources of metals in the contact cooling water discharge include process materials, the municipal water supply, and process piping. EPA reviewed Material Safety Data Sheets (MSDSs) for the most widely used process materials at the Facility, and generally, several metals were identified.

The 2005 Permit required monitoring of aluminum on a monthly basis. In addition, the Whole Effluent Toxicity (WET) test includes metals analysis for aluminum, calcium, cadmium, chromium,

copper, magnesium, nickel, lead, and zinc. EPA's January 12, 2012 308 letter requested additional analyses for antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, and zinc. A summary of metals monitoring completed at the Facility between 2005 and 2012 is included in Attachment 3.

There are no technology-based ELGs for metals in process wastewater in the Paving and Roofing Materials Point Source Category, Subpart C., Asphalt Roofing Subcategory. The Commonwealth of Massachusetts requires that effluent limitations for metals be based upon the criteria published in the *National Recommended Water Quality Criteria* (WQC): EPA-822-R-02-047, 2002, unless site-specific criteria are established or MassDEP determines that natural background concentrations are higher than the criteria (see 314 CMR 4.05(5)(e)).

EPA has evaluated the reasonable potential of metals concentrations to cause or contribute to downstream concentrations that exceed the applicable WQC. Pursuant to 314 CMR 4.03, EPA considered available background concentrations of metals when evaluating effluent limitations. EPA used ambient concentration data for the receiving water immediately upstream of the discharge from the Facility's WET tests for 2011 through 2013. EPA considered the median concentration most representative for the receiving water in the vicinity of the Facility's discharge. The reasonable potential analysis for metals is included in Attachment 7 and summarized below.

Aluminum, Antimony, Iron, and Manganese

These metals were identified in process materials used at the Facility but are not hardness-dependent. The 2005 Permit included a reporting requirement for total recoverable aluminum on a monthly basis. From January 1, 2009 through December 31, 2013 the aluminum concentrations reported for Outfall 001 ranged from 0.1 to 8.4 mg/L. EPA determined that there is no reasonable potential for the Facility's discharges of aluminum to cause or contribute to concentrations that exceed the instream acute WQC. However, because concentrations of aluminum are above the acute exposure limit for freshwater organisms in the effluent discharge, the Draft Permit maintains weekly aluminum monitoring requirements. EPA determined that there is reasonable potential for the Facility's discharges of aluminum to cause or contribute to concentrations that exceed chronic WQC. The calculated water quality-based effluent limit for average monthly discharges of aluminum established in the Draft Permit is 2.6 mg/L.

Based on available data from May 1, 2010 through August 31, 2013, the discharge from Outfall 001 did not contain concentrations of antimony above the laboratory practical quantitation limits (PQLs), which are less than the applicable criteria. Therefore, there is no reasonable potential for the Facility's discharges of antimony from Outfall 001 to cause or contribute to concentrations that exceed WQC. Concentrations of iron in the discharge from Outfall 001 ranged from 0.97 to 1.9 mg/L. EPA determined that there is no reasonable potential for the Facility's discharges of iron to cause or contribute to concentrations that exceed the chronic WQC. However, because concentrations of iron are above the chronic exposure limit for freshwater organisms in the effluent discharge, the Draft Permit establishes iron monitoring requirements. There are currently no fresh water chronic or acute WQC for manganese. The EPA "organism only" human health WQC for manganese is 0.1 mg/L. However, EPA does not have information to determine if manganese is present in the discharge from Outfall 001.

Monitoring for certain metals is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of these metals in process materials but the unknown effect on the discharge from Outfall 001, EPA is adding monitoring requirements for antimony, iron, and manganese and maintaining monitoring requirements for aluminum under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing.

Chromium, Copper, Lead, Nickel, and Zinc

These metals were identified in process materials used at the Facility and are hardness-dependent. Based on available data from May 1, 2010 through August 31, 2013, the discharge from Outfall 001 contained chromium, nickel and zinc at concentrations below acute and chronic criteria. EPA determined there is no reasonable potential for discharges of chromium, nickel or zinc from Outfall 001 to cause or contribute to concentrations that exceed WQC. Therefore, the Draft Permit does not include effluent limitations for these metals. Monitoring for nickel and zinc is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of chromium in process materials but the unknown effect on the discharge from Outfall 001, EPA is adding monitoring requirements for chromium under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing.

Concentrations of copper and lead were present in the discharge at concentrations occasionally above acute and/or chronic criteria. EPA determined that there is no reasonable potential for the Facility's discharges of copper or lead to cause or contribute to concentrations that exceed the chronic WQC. However, because concentrations of copper and lead are occasionally above the acute and/or chronic exposure limits for freshwater organisms the effluent discharge, the Draft Permit establishes copper and lead monitoring requirements.

Arsenic, Cadmium, Mercury, Selenium, and Silver

These metals were not identified in process materials used at the Facility. Based on available data from May 1, 2010 through August 31, 2013, the discharge from Outfall 001 did not contain concentrations of these metals above the PQLs. For this reason, there is no reasonable potential for discharges of arsenic, cadmium, mercury, selenium, or silver from Outfall 001 to cause or contribute to concentrations that exceed WQC. Therefore, the Draft Permit does not include effluent limitations for these metals. However, monitoring for cadmium is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis.

Calcium and Magnesium

Calcium and magnesium do not have acute or chronic aquatic life criteria or human health criteria in the *National Recommended WQC* nor has Massachusetts established WQC for these metals in 314 CMR 4.00. Nevertheless, these metals have been monitored at the Facility in conjunction with WET testing. EPA's revised Freshwater Acute Toxicity Test Procedure and Protocol (2011) no longer requires the monitoring of these metals. However, because these metals are present in the discharge

and may affect the hardness of the effluent, which may affect the toxicity/bioavailability of metals such as copper and aluminum, monitoring for calcium and magnesium will continue twice per year in conjunction with WET testing.

7.1.7 Total Residual Chlorine (TRC)

Chlorine and chlorine compounds can be extremely toxic to aquatic life. As described above, the Facility uses municipal water supplied by the MWRA for the source of its contact cooling water. Potable water sources receive chlorine treatment to minimize or eliminate pathogens. 40 CFR §141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/l for more than 4 hours. The Massachusetts Water Quality Standards *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, dated February 23, 1990, states that waters shall be protected from unnecessary discharges of excess chlorine.

Massachusetts WQSs require the use of federal WQC where a specific pollutant could reasonably be expected to adversely affect existing or designated uses (314 CMR 4.05 (5)(e)). The National Recommended freshwater acute and chronic WQC for TRC are 19 µg/L (0.019 mg/L), and 11 µg/L (0.011 mg/L), respectively. Using the calculated available dilution in the Neponset River (55:1), EPA calculated the TRC effluent limits as follows:

Acute TRC limit = 19 µg/L * 55 = 1.0 mg/L
Chronic TRC limit = 11 µg/L * 55 = 0.6 mg/L

In order to determine if discharges of contact cooling water from the Facility contain residual chlorine levels which have reasonable potential to cause or contribute to an excursion above WQC, the Draft Permit requires monthly monitoring for TRC. Monitoring for TRC will also continue twice per year in conjunction with WET testing.

EPA notes that the WQC are below the current analytical detection limit for TRC. In these situations, EPA Region 1 is following guidance set forth in the *Technical Support Document for Water Quality Based Toxics Control* (EPA 505/2-90-001, March 1991), page 111, which recommends that the limit at which compliance determinations will be based is the minimum level (ML). The ML is not the minimum level of detection, but rather the lowest point on the curve used to calibrate the test equipment for the pollutant of concern. For this Draft Permit, the ML for TRC is defined as 20 µg/L. If EPA approves a more sensitive method of analysis for TRC, the permit may be modified to require the use of the new method with a corresponding lower ML.

7.1.8 Nutrients

Ammonia and phosphorus may stimulate algal blooms which can impact the receiving water's dissolved oxygen level. Nutrients can also be toxic at elevated levels. Based on information provided in the Permittee's application and data from the Facility's WET testing, concentrations of ammonia range from below laboratory PQLs to 0.032 mg/L in discharges from Outfall 001. Effluent data is not available for total phosphorus for Outfall 001.

EPA's recommended chronic criteria for ammonia are based on temperature, pH and the presence of salmonids in the Genus *Oncorhynchus* are present in the receiving water. Available temperature data for the Neponset River collected by MassDEP, the USGS and the Neponset River Watershed Association between 2000 and 2011 indicate that surface water temperatures in the Neponset River range from approximately 34ºF in the winter to as much as 80°F in the summer. The maximum allowable instream water temperature under Massachusetts WQSs is 83ºF. The Draft Permit limits the pH of the effluent to a maximum of 8.3 SU. According to the 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, the ammonia limits decrease as pH and temperature increase. Therefore, EPA considered ammonia under worst case conditions, that is, the maximum allowable pH, 8.3 SU, and the maximum allowable temperature, 83ºF, for the presence and absence of salmonids in the Genus *Oncorhynchus*.

Based on the 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, when salmonids are present, the pH of the receiving water is 8.3 SU and the maximum receiving water temperature is 28ºC (82.4ºF), the recommended acute criterion value is 1.1 mg/L. When salmonids are absent, the pH of the receiving water is 8.3 SU and the maximum receiving water temperature is 28ºC (82.4ºF), the recommended acute criterion value is also 1.1 mg/L. When the pH of the receiving water is 8.3 SU and the maximum receiving water temperature is 28ºC (82.4ºF), the recommended chronic criterion value is 0.29 mg/L.

As described above, the Neponset River in the vicinity of the discharge is impaired for excess algal growth, and DO. Therefore, to determine the applicable ammonia criteria and to fully evaluate if discharges of contact cooling water from the Facility contain ammonia levels which have reasonable potential to cause or contribute to an excursion above WQC, the Draft Permit includes monitoring requirements for daily maximum ammonia under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including nitrogen, in conjunction with the solids minimization (see Section 7.4).

Given the impairments to the Neponset River for excess algal growth, DO, and phosphorus (total) and the lack of information regarding total phosphorus in discharges from Outfall 001, additional requirements are included in the Draft Permit to determine if the direct or indirect discharge of phosphorus is causing or contributing to an exceedance of Massachusetts' WQSs. EPA has added monitoring requirements for daily maximum and monthly average total phosphorus under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including phosphorus, in conjunction with the solids minimization requirement (see Section 7.4). Inclusion of monitoring for a pollutant (or indicator) for which the receiving water is impaired is consistent with EPA's MSGP.

7.1.9 Whole Effluent Toxicity Testing (LC_{50})

The 2005 Permit included a Whole Effluent Toxicity (WET) acute LC_{50} limit of ≥100% for Outfall 001. A LC_{50} limit of ≥100% means that a sample of 100 % effluent shall cause no greater than or equal to a 50% mortality rate to the test organisms in that effluent sample during an exposure of 48 hours. Testing was required two times a year (May and August) for the daphnid *Ceriodaphnia dubia*.

From January 1, 2009 through December 31, 2013, the reported LC50 was ≥100% in each of the 14 tests completed.

Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Under certain State narrative WQSs, and Sections 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts". Massachusetts has narrative criteria in their water quality regulations (see Massachusetts 314 CMR 4.05(5)(e)) that prohibit toxic discharges in toxic amounts. The Draft Permit prohibits the addition of toxic materials or chemicals to the discharges and prohibits the discharge of pollutants in amounts that would be toxic to aquatic life.

To meet Massachusetts' narrative criteria found at 314 CMR 4.05(5)(e), the Draft Permit prohibits the discharge of pollutants in amounts that would be toxic to aquatic life. WET testing is conducted to determine whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination that produces a toxic amount of pollutants in the receiving water. Therefore, toxicity testing is used in conjunction with pollutant-specific control procedures to minimize the discharge of toxic pollutants.

The regulations at 40 CFR Part 122.44(d)(ii) state, "*When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing...*" MassDEP in its "Implementation Policy for the Control of Toxic Pollutants in Surface Waters" (February 23, 1990) ("Toxics Policy") sets forth toxicity limits according to dilution factors based on perceived risk. The dilution factor determined for the facility is 55:1. For dilution in the moderate risk category (>20:1 but ≤100:1), the effluent limits established in the Toxics Policy for acute effects in the mixing zone (i.e., given available dilution) are 0.3 toxic units (T.U.), and an end-of-pipe limit of 1.0 T.U. (i.e., an LC_{50} of 100%). Massachusetts' Toxics Policy requires acute testing four times per year for two species when there is reasonable potential for discharges to exceed applicable criteria.

As described above, the regulations at 40 CFR §122.44(l)(1) require reissued NPDES permits to contain limits as stringent or more stringent than the previous permit. Since the 2005 Permit contained a limit for LC_{50}, the Draft Permit maintains a limit of LC_{50} ≥100 in accordance with anti-backsliding requirements. The Draft Permit further clarifies that testing is required for **effluent** and chemical analysis requirements for **receiving water**. The Permittee must collect the required receiving water sample (i.e., diluent) from the Neponset River at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. A receiving water control (0% effluent) must be tested twice per year for the chemical parameters in Attachment A, Freshwater Acute Toxicity Test Procedure and Protocol (2011). If toxicity is indicated, the Permittee is allowed use of alternate dilution water in accordance with the provisions in the Draft Permit. To clarify the requirements for effluent and receiving water for this testing, EPA has included WET parameters on the DMRs. Results of these toxicity tests will demonstrate compliance with the Massachusetts WQSs.

As described above, Massachusetts' toxicity implementation policy requires quarterly testing. However, the 2005 Permit reduced the frequency of WET from quarterly to twice per year because the Facility has maintained WET results ≥100%. The reporting requirement in the Draft Permit is twice per year for one species, which is based on the frequency required in the 2005 Permit. Samples taken in accordance with the WET testing requirements may be used to satisfy other sampling requirements required at weekly or monthly monitoring frequency in the Draft Permit (i.e., TRC, ammonia, copper, lead, nickel, and zinc) may also be used to satisfy the weekly or monthly sampling requirements for those parameters as long as the timing of sampling for the remaining parameters in Part I.A.1. coincides with the 2/year sampling for WET.

Monitoring for certain chemical parameters is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of additional metals in process materials at the granule plant used at the roofing plant, the presence of nutrients at elevated concentrations in discharges from the Facility, and impairments to the Neponset River, EPA is adding monitoring requirements to Part VI. Chemical Analysis for total phosphorus, antimony, iron, manganese, chromium, calcium, and magnesium to be conducted twice per year in conjunction with WET testing.

7.2 Outfall 002

7.2.1 Flow

The 2005 Permit required reporting the daily maximum and average monthly flow of treated cleaning, dust control, and non-contact cooling water through Outfall 002. The characterization of this discharge has been clarified to include contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater. From January 1, 2009 through December 31, 2013, the minimum flow reported was 0.00288 MGD (2,880 gallons per day) and the maximum flow reported was 0.144 MGD (144,000 gallons per day). No discharge was reported from Outfall 002 for 57 of the 60 months of monitoring. One flow measurement was recorded for each monitoring period, as allowed by the 2005 Permit. As a result, the daily maximum and monthly average values are the same.

In March and early April 2012, the Facility completed significant maintenance on the detention pond for Outfall 002. As a result, it is unclear if the data from the previous permit cycle are representative of the conditions resulting from discharge. In order to collect information representative of discharges from this outfall, EPA is establishing requirements for Outfall 002 when discharging, rather than in connection with certain-sized precipitation events. The Draft Permit continues to require reporting of the daily maximum and monthly average flow. In addition, the Draft Permit requires that the number of discharge events be reported monthly.

7.2.2 TSS

The 2005 Permit included a monthly average TSS limit of 20 mg/L and maximum daily limit of 30 mg/L continued on the basis of requirements under anti-backsliding regulations and are based on the treatment of the effluent by sedimentation. These limits were established in the permit issued September 31, 1997. From January 1, 2009 through December 31, 2013 TSS concentrations ranged

from below laboratory PQLs to 130 mg/L. The samples for these measurements were collected from the surface of the detention pond when no discharge occurred during a monitoring period.

As discussed in Section 3 and 7.1.3 above, the Neponset River is impaired for sedimentation/siltation, TSS, and turbidity. Given the impairment to the Neponset River and the concentrations of TSS measured in effluent from the Facility, the Draft Permit maintains the concentration-based limits for maximum daily and monthly average TSS of 30 mg/L and 20 mg/L, respectively. In addition, the Facility must incorporate solids minimization BMPs into its SWPPP for this outfall. Given that the concentration-based TSS limits are more restrictive than the concentration noted in the Neponset River Resource Assessment as an interpretation of the narrative criterion for solids, 80 mg/L, the low frequency of discharge from Outfall 002, and in accordance with anti-backsliding requirements, EPA has concluded that concentrations of TSS in discharges from the Facility will not violate Massachusetts' WQSs.

7.2.3 pH

From January 1, 2009 through December 31, 2013 the pH values reported for Outfall 002 range from 6.5 SU to 7.1 SU. The samples for these measurements were collected from the surface of the detention pond when no discharge occurred during a monitoring period. Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(3), for Class B waters require pH to be within the range of 6.5 to 8.3 SU and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs. Based on the frequency of discharge expected from Outfall 002 and the sample results collected from the detention pond, the monitoring frequency for pH has been reduced to monthly.

7.2.4 Nutrients

Monitoring for ammonia is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Given the impairments to the Neponset River for excess algal growth, DO, and phosphorus (total) and the lack of information regarding phosphorus and ammonia in discharges from Outfall 002, additional requirements are included in the Draft Permit to determine if the direct or indirect discharge of phosphorus or ammonia are causing or contributing to an exceedance of Massachusetts' WQSs. EPA has added monitoring requirements for daily maximum phosphorus under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including phosphorus, in conjunction with the solids minimization requirement (see Section 7.4). Inclusion of monitoring for a pollutant (or indicator) for which the receiving water is impaired is consistent with EPA's MSGP.

7.2.5 Whole Effluent Toxicity

Certainteed uses inorganic pigments, petroleum distillates and other bulk raw materials in processes at the granule plant. As described above, EPA reviewed MSDSs for the most widely used process materials at the Facility, and generally, several toxic pollutants were identified. In addition, ecotoxicology data available for several of these materials indicates the potential for adverse effects to aquatic life. Finally, the Facility provided sample results for the waters contributing to Outfall 002

in response to EPA's 308 letter which indicated several metals present in the water treated in the detention basin.

The above referenced ecotoxicology data reflect the toxicity of a single chemical, but provide no indication of the potential toxic impacts resulting from the suite of pollutants combined in the effluent at Outfall 002. WET testing monitors the cumulative impacts of a number of potential toxicants. In addition, the nature of the discharge has not been fully characterized, as discharges from this Outfall occur with limited frequency, and no toxicity testing has been conducted. While analytical data provided in response to EPA's 308 letter indicated the presence of metals in the detention pond water, it is not known to what extent these metals are present when a discharge via Outfall 002 occurs.

Given the unknown cumulative toxicity of pollutants potentially present in the discharge to Outfall 002 and the possibility that the cumulative toxicity may be greater than the toxicity of any one constituent, the Draft Permit requires two acute WET tests per year to determine whether the discharge has the reasonable potential to cause or contribute to an excursion above state water quality criteria for toxicity at 314 CMR 4.05(5)(e). In addition, this toxicity monitoring requirement supports the narrative requirement at Part I.A.12 of the Draft Permit that prohibits the discharge of "materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving water." Given the low frequency of discharge via Outfall 002, the Draft Permit specifies that sampling occur during a specified monitoring period in the first year of the permit, or the next discharge event, if no discharge occurs. Once the permittee submits two test results, no additional testing is required.

Monitoring for certain chemical parameters is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of additional metals in process materials at the granule plant, the presence of nutrients at elevated concentrations in discharges from the Facility, and impairments to the Neponset River, EPA is adding monitoring requirements to Part VI. Chemical Analysis for total phosphorus, antimony, iron, manganese, chromium, calcium, and magnesium to be conducted twice per year in conjunction with WET testing.

7.3 Outfalls 003 and 004

7.3.1 Flow

These discharges are intermittent and occur only during precipitation events. The 2005 Permit required that flow be reported for the discharge events associated with the sampling of the outfall, but contained no flow limits. From January 1, 2009 through December 31, 2013 the flow reported per batch discharge was 20 gallons for Outfall 003 and 22 gallons for Outfall 004.

The Permittee uses OWSs for treatment of stormwater runoff which employ gravity to separate lower-density oils from water, resulting in an oil phase above the oil/water interface and a heavier particulate phase on the bottom of the separator. The sizing of an OWS is based upon the flow rate, density of oil to be separated, desired percent removal of oil, and the operating temperature range. The OWS in the tank farm has a design flow capacity of 20 gpm and the OWS in the still yard has a design flow capacity of 100 gpm.

To ensure that the flow through the OWSs be maintained at or below the maximum design flow rate, such that the oil and/or particulate phases potentially present in the OWSs are not entrained to the waterway, the Draft Permit has added a daily maximum flow rate limit of 20 gpm for Outfall 003 and a daily maximum flow rate limit of 100 gpm for Outfall 004. The Draft Permit also requires that the Permittee report the number of discharge events for these outfalls, and employ the use of a flow meter to record the total flow and flow rate through the OWSs to control the intake and discharge of stormwater through the OWSs such that the design flow capacity is not exceeded.

7.3.2 TSS

The 2005 Permit included a monthly average TSS limit of 10 mg/L and maximum daily limit of 15 mg/L for both outfalls. These limits were established in the permit issued September 31, 1997 as technology-based limits based on BPJ. From January 1, 2009 through December 31, 2013 TSS concentrations ranged from below laboratory PQLs to 99 mg/L for Outfall 003 and from below laboratory PQLs to 36 mg/L for Outfall 004.

As discussed in Section 3 and 7.1.3 above, the Neponset River is impaired for sedimentation/siltation, TSS, and turbidity. Given the impairment to the Neponset River and the concentrations of TSS measured in effluent from the Facility, the Draft Permit maintains the concentration-based limits for maximum daily and monthly average TSS of 15 mg/L and 10 mg/L, respectively. In addition, the Facility must incorporate solids minimization BMPs into its SWPPP for these outfalls. Given that the concentration-based TSS limits are more restrictive than the concentration noted in the Neponset River Resource Assessment as an interpretation of the narrative criterion for solids, 80 mg/L, and in accordance with anti-backsliding requirements, EPA has concluded that concentrations of TSS in discharges from the Facility will not violate Massachusetts' WQSs.

7.3.3 pH

From January 1, 2009 through December 31, 2013 the pH values reported for Outfall 003 at the O/W separator discharge ranged from 6.0 SU to 7.2 SU and the pH values reported for Outfall 004 at the O/W separator discharge ranged from 6.0 SU to 8.0 SU. These discharges are infrequent and are expected to occur only during precipitation events. Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(3), for Class B waters require pH to be within the range of 6.5 to 8.3 standard units (SU) and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU for these Outfalls, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs.

7.3.4 Oil and Grease

From January 1, 2009 through December 31, 2013, Oil and Grease levels have ranged from below the laboratory PQLs to 35.6 mg/L at Outfall 003 and from below the laboratory PQLs to 19.1 mg/L at Outfall 004. The 2005 Permit included a daily maximum limit of 15 mg/L for oil and grease for these outfalls. The drainage areas contributing to these outfalls are also subject to the Spill Prevention, Control, and Countermeasure (SPCC) Rule in 40 CFR Part 112, which require facilities that store certain quantities of oil to prepare, amend, and implement an SPCC Plan to prevent, prepare for and respond to oil discharges to waters of the United States.

The Draft Permit maintains a maximum daily limit for oil and grease of 15 mg/L at these Outfalls, monitored quarterly, to ensure compliance with Massachusetts WQSs at 314 CMR 4.05(3)(b)(7), at the level recognized at which many oils produce a visible sheen and/or cause an undesirable taste in fish (EPA Water Quality Criteria, 1972). These limits satisfy anti-backsliding requirements.

7.3.5 Nutrients

Based on information provided in the Permittee's application, the concentration of ammonia in discharges at Outfalls 003 and 004 were 1.8 mg/L and ranged from 3.2 mg/L to 5.1 mg/L, respectively, in limited confirmatory samples. Information also provided in the Permittee's application indicated that the concentration of total phosphorus in discharges from Outfalls 003 and 004 were 0.99 mg/L and 1.1 mg/L, respectively. Given the impairments to the Neponset River for excess algal growth, DO, and phosphorus (total) and the limited information regarding phosphorus and ammonia in discharges from Outfalls 003 and 004, additional requirements are included in the Draft Permit to determine if the direct or indirect discharge of phosphorus or ammonia are causing or contributing to an exceedance of Massachusetts' WQSs. EPA has added monitoring requirements for daily maximum ammonia and phosphorus conducted twice per year. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including nitrogen and phosphorus, in conjunction with the solids minimization requirement (see Section 7.4). Inclusion of monitoring for a pollutant (or indicator) for which the receiving water is impaired is consistent with EPA's MSGP.

7.4 Stormwater Pollution Prevention Plan (SWPPP)

The Facility engages in activities that could result in the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff. These operations include at least one of the following in an area potentially exposed to precipitation or stormwater: material storage, in-facility transfer, material processing, material handling, or loading and unloading. Specifically, at the Facility, routine transfer and storage of raw, intermediate and finished materials between production areas at the Facility, and maintenance and cleaning of the treatment systems for solids and/or oil are examples of material storage, processing and handling operations that shall continue to be included in the SWPPP. To control activities/operations that could contribute pollutants to waters of the United States and potentially violate Massachusetts WQSs, the Draft Permit requires the facility to continue to implement, and maintain a SWPPP documenting the application of BMPs appropriate for this specific facility (See Sections 304(e) and 402(a)(1) of the CWA and 40 CFR §122.44(k)).

The goal of the SWPPP is to reduce or prevent the discharge of pollutants through the stormwater system. The SWPPP requirements in the Draft Permit are intended to facilitate a systematic approach for the Permittee to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this permit. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the Facility. The SWPPP documents the appropriate BMPs implemented or to be implemented at the Facility to satisfy the non-numeric technology-based effluent limitations included in the Draft Permit.

This process involves the following four main steps:

1. Forming a team of qualified facility personnel who will be responsible for developing and updating the SWPPP and assisting the Facility manager in its implementation;
2. Assessing the potential stormwater pollution sources;
3. Selecting and implementing appropriate management practices and controls for these potential pollution sources; and
4. Reevaluating, periodically, the effectiveness of the SWPPP in preventing stormwater contamination and in complying with the various terms and conditions of the Draft Permit.

Pursuant to Section 304(e) of the CWA and 40 CFR §125.103(b), BMPs may be expressly incorporated into a permit on a case-by-case basis where necessary to carry out Section 402(a)(1) of the CWA. Generally, BMPs should include processes, procedures, schedules of activities, prohibitions on practices, and other management practices that prevent or reduce the discharge of pollutants. To control activities or operations, which could contribute pollutants to waters of the United States via stormwater discharges at the Facility, the Draft Permit requires the Facility to continue to update and implement its SWPPP by selection, design, installation, and implementation of control measures (including BMPs) to meet the non-numeric requirements and meet the other limits which apply to the outfalls. The permittee is required to incorporate BMPs described in EPA's MSGP that can be used to minimize contact between stormwater and potential pollutants for the industrial sectors relevant to the Facility.[9] In addition, the Draft Permit requires the Facility to implement several specific BMP requirements. These BMPs include the following:

1. Sampling Procedure
2. Material Management
3. Inspections

The SWPPP requirement also includes specific BMPs for solids minimization. The purpose of the solids minimization BMP is to address loading of solids, including settleable and/or suspended sediment, silt, solids, and/or organic matter to the Neponset River, which is impaired for sedimentation/siltation, TSS, turbidity, excess algal growth, DO, and total phosphorus. The requirements include evaluating and minimizing sources of solids, including nutrients (i.e., nitrogen and phosphorus), quantifying solids and nutrient loading, designing and implementing control measures or alterations needed in the current treatment systems at the Facility to address the removal of solids and nutrients, and adopting practices that will maintain such removal.

The BMPs noted must detail proper sampling locations and procedures consistent with the Draft Permit for each outfall, describe the standard operating procedures for handling water and/or solids removed from the treatment and control systems (or related appurtenances), and establish a minimum assessment and maintenance schedule for the outfalls and treatment systems consistent with requirements in Parts I.A. and Part II of the Draft Permit. A copy of the most recent SWPPP must be kept at the Facility and be available for inspection by EPA and MassDEP. The SWPPP is a

[9] The MSGP can be found at http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf

supporting element to any numerical effluent limitation which minimizes the discharge of pollutants through the proper operation of the Facility. Consequently, the SWPPP is as equally enforceable as the numerical limits and other requirements of the Draft Permit.

The SWPPP requirements for outfalls authorized by this permit may be incorporated into any existing SWPPP for the facility (i.e., a SWPPP prepared for MSGP permit coverage for discharges of stormwater associated with industrial activity). However, where any provision that applies to outfalls authorized under this permit differs from the requirements of a SWPPP prepared to meet the requirements of the MSGP, the requirements in this permit will apply to these outfalls. See **Part I.D.1.** of the Draft Permit for specific SWPPP requirements.

8. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's actions or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat, such as waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity (16 U.S.C. §1802(10)). "Adversely impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR §600.910(a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. §1855(b)(1)(A)) EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

EPA has determined that "No Habitat Areas of Particular Concern" as defined under Section 600.815(a)(9) of the Magnuson-Stevens Act are identified for the Neponset River at the Facility (Latitude 42° 10' 08" Longitude 71° 12' 23").[10] However, the Neponset River drains to the EFH area which encompasses Boston Harbor and affects the Neponset River and Old Harbor. Attachment 8 shows the designated EFH species believed to be present during one or more life stages within the Boston Harbor EFH area.

EPA has concluded that the limits and conditions contained in this Draft Permit minimize adverse effects to EFH or associated species, if present, for the following reasons:

- The Facility withdraws no water from the Neponset River; therefore no life stages of aquatic species are vulnerable to impingement or entrainment from this facility;
- Effluent limits have been established for TSS, pH, temperature, oil & grease, and aluminum to be protective of aquatic organisms and address the Neponset River impairment for siltation;
- The combined long term average discharge from the Facility is low (0.045 MGD);
- The dilution factor for process water outfall 001 is high (55); and
- The permit prohibits any violation of Massachusetts WQSs.

[10] NOAA EFH Mapper available at http://www.nero.noaa.gov/hcd/index2a.htm

EPA believes that the conditions and limitations contained within the Draft Permit adequately protect all aquatic life, including those species with EFH designation in the Boston Harbor system. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted. If adverse impacts to EFH are detected because of this permit action, or if new information is received that changes the basis for EPA's conclusion, NMFS will be notified and an EFH consultation will be initiated.

9. Endangered Species Act

Under Section 7(a) of the Endangered Species Act, every federal agency is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize federally listed endangered or threatened species of fish, wildlife, or plants, or result in the adverse modification of critical habitat of such species. EPA initiates consultation concerning listed species under their purviews with the United States Fish and Wildlife Service (USFWS) for freshwater species, and the National Marine Fisheries Service (NMFS) for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in Norfolk County to determine if the issuance of this NPDES permit could potentially impact any such listed species. According to the USFWS, there are no species or critical habitats listed within Norfolk County. [11] According to available Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program Priority and Estimated Habitat maps,[12] no federally listed endangered or threatened species are known to occur in the vicinity of the discharge. Based on this assessment, it is highly unlikely federally listed endangered or threatened species would be present in the vicinity of this discharge. Therefore, consultation with NMFS under Section 7 of the ESA is not required. During the public comment period, both NMFS and USFWS receive a copy of the Draft Permit and Fact Sheet for review.

10. Monitoring

The permit limitations and conditions have been established to yield data representative of the discharges under the authority of Section 308(a) of the CWA, according to regulations set forth at 40 CFR §122.41(j), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis, which will provide continuous information on the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

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[11] No listing for Norfolk County in *Federally Listed Endangered and Threatened Species in Massachusetts* at http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm

[12] Access available at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/regulatory-maps-priority-and-estimated-habitats/

The Draft Permit includes new provisions related to DMR submittals to EPA and the State. The Draft Permit requires that, **no later than six months after the effective date of the permit**, the Permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the Permittee 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"). In the interim (until six months 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.

NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure Internet application to EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR §122.41 and §403.12. EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. NetDMR can be accessed at http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, information on upcoming trainings, and contact information for Massachusetts, is provided on this website.

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month using NetDMR, 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 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 must continue to send hard copies of reports other than DMRs to MassDEP until further written notice from MassDEP.

The Draft Permit also includes an "opt-out" request process. Permittees who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing to EPA, at least 60 days prior to the date the Terminal would have otherwise been required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for 12 months. The opt-outs expire at the end of this 12 month period. Upon expiration, the permittee Permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee Permittee submits a renewed opt-out request 60 days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees with written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

11. State Certification Requirements

EPA may not issue a permit unless the MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Surface Water Quality Standards or unless state certification is waived. The staff of the MassDEP has staff have reviewed the draft permit and advised EPA that the limitations are adequate

to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects that the draft permit will be certified.

12. Comment Period, Hearing Requests, and Procedures for Final

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Shauna Little, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Section, 5 Post Office Square, OEP 06-1, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 CFR §124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office. Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 CFR §124.19.

13. EPA and MassDEP Contacts

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

Shauna Little, EPA– Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1989
FAX: (617) 918-0989
Email: little.shauna@epa.gov

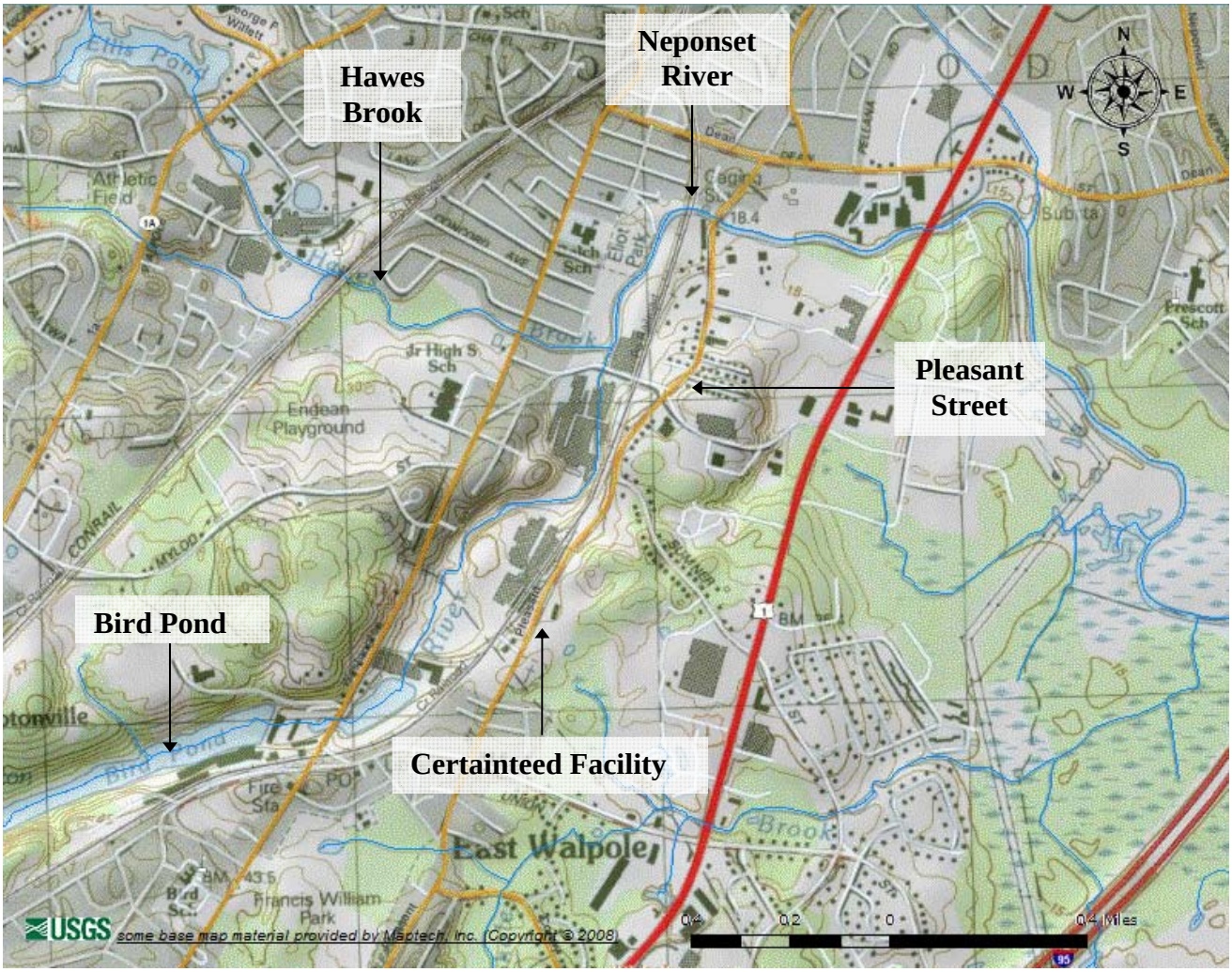
Cathy Vakalopoulos, MassDEP
Division of Wastewater Management
Surface Water Discharge Permit Program
1 Winter Street, 5th Floor
Boston, Massachusetts 02108
Telephone: (617) 348-4026
FAX: (617) 292-5696
Email: catherine.vakalopoulos@state.ma.us

5/27/2014

Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

NPDES Permit No. MA0003531

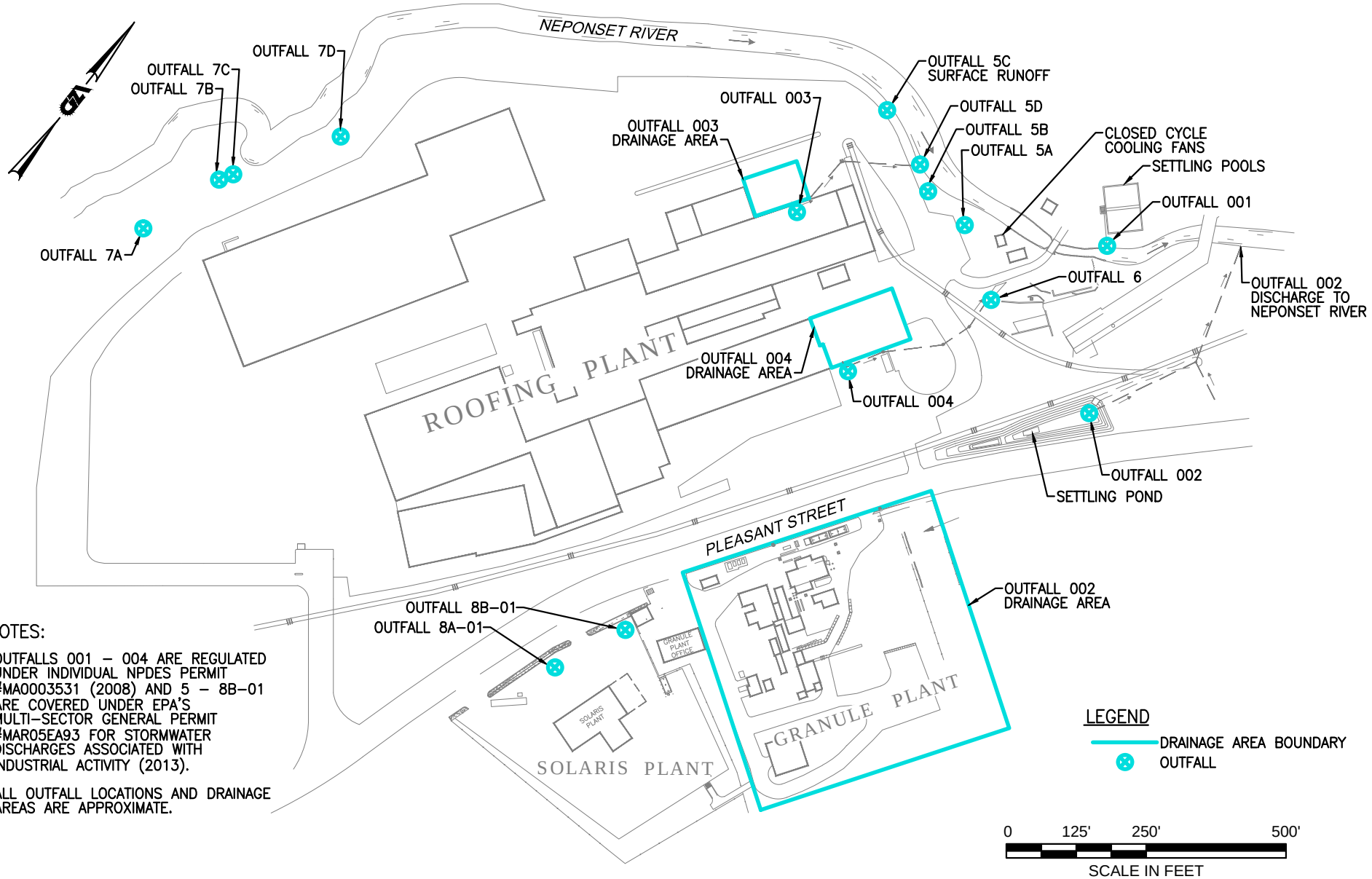
Attachment 1: Certainteed Location Map



Source: http://water.usgs.gov/osw/streamstats/massachusetts.html

Attachment 2: Certainteed Site Plan

Exhibit 4
AR A.1



NOTES:

OUTFALLS 001 – 004 ARE REGULATED UNDER INDIVIDUAL NPDES PERMIT #MA0003531 (2008) AND 5 – 8B-01 ARE COVERED UNDER EPA'S MULTI-SECTOR GENERAL PERMIT #MAR05EA93 FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY (2013).

ALL OUTFALL LOCATIONS AND DRAINAGE AREAS ARE APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

NDPES PERMIT - SITE PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 1
DESIGNED BY: RBP	DRAWN BY: EMD	SCALE: 1"=250'	
DATE: 02-07-2014	PROJECT NO. 01.0171200.15	REVISION NO.	

NPDES Permit No. MA0003531

Attachment 3: Discharge Monitoring Data

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 001
Monthly Reporting

Monitoring Period End Date	Flow (Mgal/day)		TSS (mg/L)		Oil & Grease (mg/L)	Temperature (deg F)		pH (SU)		Aluminum (mg/L)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max	Mo Avg	Daily Max	Min	Max	Daily Max	Mo Avg
Jan-09	0.0035	0.0202	25.9	54	10	34	36.5	6.8	6.8	0.4	0.4
Feb-09	0.0096	0.036	63.2	190	<5	34	36.5	6.8	7.0	3.8	3.8
Mar-09	0.05	0.09	15.8	24	<5	39.1	44	6.8	7.8	2.6	2.6
Apr-09	0.0011	0.0028	19.6	27	<5	46.4	49	6.8	7.0	1.4	1.4
May-09	0.0024	0.0116	8.3	14	<5	57.1	61.7	6.8	7.0	1.3	1.3
Jun-09	0.01	0.0464	11.2	18	<5	65.8	68	6.8	7.5	3.3	3.3
Jul-09	0.0154	0.0456	12.8	19	<5	71.4	74	6.8	6.8	1.1	1.1
Aug-09	0.0033	0.0151	7.1	18	<5	75.1	78	6.7	6.8	0.3	0.3
Sep-09	0.0035	0.0156	10.4	15	<5	68	75	6.8	6.9	1.1	1.1
Oct-09	0.0048	0.0247	12.5	14	<5	54.4	60.5	6.5	6.8	2.0	2.0
Nov-09	0.0003	0.0011	17.8	23	---	52.7	56.9	6.7	6.8	2.4	2.4
Dec-09	0.004	0.0207	16.6	19	<5	43.9	53.4	6.5	6.8	2.0	2.0
Jan-10	0.0055	0.0197	18.3	24	<10	38.9	44.5	6.7	6.8	0.9	0.9
Feb-10	0.0034	0.0166	19.3	23	<5	38.8	42.3	6.7	7.0	3.9	3.9
Mar-10	0.0011	0.00202	6	8	<5	46.8	51	6.5	6.8	1.3	1.3
Apr-10	0.002	0.0021	16.5	25	<5	55.4	67	6.5	6.8	1.2	1.2
May-10	0.0053	0.0181	10.5	17	<5	64.5	70	6.7	6.8	1.3	1.3
Jun-10	0.0047	0.0197	8.2	12	<5	72	76.1	6.7	7.1	0.4	0.4
Jul-10	0.0114	0.0529	12.8	15	<5	77.5	80.8	6.5	7.0	1.9	1.9
Aug-10	0.0059	0.0267	8.9	20	<5	74.5	79.6	6.8	7.0	8.4	8.4
Sep-10	0.0029	0.0136	13.9	19	<5	69.8	77.5	6.8	7.0	1.7	1.7
Oct-10	0.0024	0.0091	37.2	110	<5	59.3	64.3	6.8	7.0	1.0	1.0
Nov-10	0.0019	0.0071	16.7	22	<5	49.4	55	6.5	7.0	1.6	1.6
Dec-10	0.0013	0.0066	7.4	14	<5	40.9	45	6.8	7.0	1.3	1.3
Jan-11	0.0071	0.0292	9.3	19	<5	38.7	42.1	6.8	7.0	1.4	1.4
Feb-11	0.0067	0.0257	15.6	24	<5	43.5	47	6.8	7.0	1.6	1.6
Mar-11	0.0022	0.0026	16.8	19	<5	51.1	57.5	6.5	7.0	0.7	0.7
Apr-11	0.0035	0.0106	13.1	15	<5	56.5	61.2	6.8	7.0	2.0	2.0
May-11	0.0038	0.0136	10.5	18	<5	63.9	73.1	6.5	6.8	1.1	1.1
Jun-11	0.0032	0.0058	12.6	16	<5	70.3	73.4	6.7	7.0	1.1	1.1
Jul-11	0.006	0.0232	6.9	10	<5	76.8	79	6.7	7.0	1.2	1.2
Aug-11	0.0049	0.0049	9.9	23	<5	76.5	81	6.8	7.0	1.4	1.4
Sep-11	0.0042	0.0176	7.4	13	<5	62.6	75.8	6.8	6.8	0.1	0.1
Oct-11	0.0006	0.0015	3.9	8.5	<5	61.7	70	6.8	7.1	0.2	0.2
Nov-11	0.0011	0.0021	5.7	9.5	<5	55.1	57.2	6.5	6.8	0.7	0.7
Dec-11	0.0045	0.0197	15.5	20	<5	51.5	55	6.8	7.0	1.9	1.9
Jan-12	0.00001	0.00001	4.3	5.5	<5	38.2	42.6	6.6	6.8	0.2	0.2
Feb-12	0.0049	0.0207	9.9	0.4	<5	42.5	46.2	6.8	7.5	0.5	0.5
Mar-12	0.0053	0.0212	15.2	20	<5	47.1	56.5	6.8	8.0	1.3	1.3

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Apr-12	0.0026	0.0081	0.8	21	<5	58.8	67.4	6.8	7.2	2.2	2.2
May-12	0.0043	0.0146	18.2	33	<5	67.9	72.8	6.9	7.2	1.1	1.1
Jun-12	0.0016	0.0017	9.8	20	<5	68.9	72.9	6.8	6.9	---	0.8
Jul-12	0.0049	0.0172	4.7	8.5	<5	79.5	85.5	6.8	7.0	0.5	0.5
Aug-12	0.0068	0.015	9.1	23	<5	75.2	79.6	6.6	7.0	1.0	1.0
Sep-12	0	0.01	6.3	9.5	<5	70.1	73.5	6.8	7	0.33	0.33
Oct-12	0	0.01	4.6	10	<5	63.2	69.4	6.8	6.9	0.66	0.66
Nov-12	0.01	0.02	10.7	15	<5	50.5	57	6.8	6.9	1	1
Dec-12	0.01	0.02	8.3	13	<4.9	44.5	45.8	6.7	6.9	1.1	1.1
Jan-13	0.01	0.01	10.4	13	<5	41.6	49.8	6.8	6.9	1.1	1.1
Feb-13	0.14	0.19	7	8.4	<5	40	43.3	6.8	6.9	1.8	1.8
Mar-13	0.02	0.02	15.3	26	<4.8	45.3	48.3	6.7	6.8	1	1
Apr-13	0.01	0.02	12.5	16	<5	53.1	59.1	6.8	7	1.8	1.8
May-13	0.01	0.01	8.4	14	<5	62.3	64.4	6.8	6.9	0.99	0.99
Jun-13	0.02	0.04	7.3	9.2	<5	70.6	78.1	6.8	7	0.2	0.2
Jul-13	0.01	0.02	6.6	12	<4.8	78.1	83.5	6.8	7	0.62	0.62
Aug-13	0.02	0.03	10.5	17	<5	73.2	75.4	6.8	7	1.6	1.6
Sep-13	0.01	0.02	12.4	21	<4.8	69	76.7	6.8	7	0.98	0.98
Oct-13	0	0.01	6.7	12	<4.8	61	68	6.8	6.9	0.37	0.37
Nov-13	0	0.01	11.2	24	4.8	50.9	57.5	6.9	6.9	2.2	2.2
Dec-13	0.01	0.03	7.3	12	<4.8	39.6	44.9	6.7	6.9	0.7	0.7
2005 Permit Limits	**0.04**	**Report**	**40**	**70**	**15**	**83**	**90**	**6.5**	**8.3**	**Report**	**Report**
Min	0	0.00001	0.8	0.4	4.8	34	36.5	6.5	6.8	0.1	0.1
Max	0.14	0.19	63.2	190	4.8	79.5	85.5	6.9	8	8.4	8.4
Avg	0.009	0.02082	12.4	22	4.8	57.2	62.3	6.73	6.99	1.41	1.40
# of measurements	20	20	20	20	1	20	20	20	20	19	20

--- = No value reported

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CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 001
Whole Effluent Toxicity Testing

Monitoring Period End Date	LC50 Static 48Hr Acute Ceriodaphnia (%)	Total Al (mg/L)	Total Ca (mg/L)	Total Cd (mg/L)	Total Cr (mg/L)	Total Cu (mg/L)	Total Mg (mg/L)	Total Ni (mg/L)	Total Pb (mg/L)	Total Zn (mg/L)	Ammonia (mg/L)
Effluent Sample	Daily Min										
May-07	>100	1.4	---	---	---	---	---	---	---	---	---
Aug-07	>100	1.2	---	---	---	---	---	---	---	---	---
May-08	>100	1.5	---	---	---	---	---	---	---	---	---
Aug-08	>100	1.1	---	---	---	---	---	---	---	---	---
May-09	>100	1.3	---	---	---	---	---	---	---	---	---
Aug-09	>100	0.27	---	---	---	---	---	---	---	---	---
May-10	>100	1.3	7.9	<0.001	0.014	0.016	1.4	<0.01	<0.005	<0.05	---
Aug-10	>100	0.84	6.4	<0.001	0.0092	0.013	1.1	<0.01	<0.005	<0.05	---
May-11	>100	1.1	6.1	<0.0005	0.012	0.01	1.0	<0.001	0.0012	0.015	<0.1
Aug-11	>100	1.4	7.1	<0.0005	0.0082	0.018	1.1	<0.001	0.0012	0.012	---
May-12	>100	1.1	6.8	<0.0005	0.012	0.011	1.2	<0.001	0.0018	0.013	<0.1
Aug-12	>100	0.76	7.3	<0.0005	0.0053	0.006	1.2	<0.001	0.00082	0.019	<0.1
May-13	>100	0.99	9.3	<0.001	0.011	0.011	1.5	<0.01	<0.005	0.017	<0.02
Aug-13	>100	1.60	8.8	<0.0005	0.009	0.0074	1.4	0.0014	0.0013	0.015	0.032
Diluent Sample											
May-11	---	0.039	15	---	---	0.0031	3.7	<0.001	0.0016	0.0066	<0.1
Aug-11	---	0.019	22	---	---	0.0018	6.1	<0.001	0.0012	<0.0025	<0.1
May-12	---	0.047	13	---	---	0.0027	3.5	<0.001	0.0024	0.0076	0.1
Aug-12	---	0.014	18	---	---	0.0024	4.9	<0.001	0.00066	0.004	0.014
May-13		<0.20	18	---	---	<0.010	4.8	<0.010	<0.005	<0.010	0.067
Aug-13		<0.20	15	---	---	0.0019	4.1	<0.001	0.0017	<0.010	0.048

--- = data not available or not validated.

NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 001
Response to Item #15 of EPA's Section 308 Information Request

Sample Date	Total Sb (mg/L)	Total As (mg/L)	Total Cd (mg/L)	Total Cr (mg/L)	Total Cu (mg/L)	Total Fe (mg/L)	Total Pb (mg/L)	Total Hg (mg/L)	Total Ni (mg/L)	Total Se (mg/L)	Total Ag (mg/L)	Total Zn (mg/L)
2/8/2012	<0.006	<0.01	<0.001	0.0058	0.012	1.1	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
2/15/2012	<0.006	<0.01	<0.001	0.017	0.017	1.7	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
2/22/2012	<0.006	<0.01	<0.001	0.0078	0.013	0.97	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
2/29/2012	<0.006	<0.01	<0.001	0.018	0.018	1.9	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
3/7/2012	<0.006	<0.01	<0.001	0.024	0.029	1.9	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
3/14/2012	<0.006	<0.01	<0.001	0.013	0.021	1.3	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 002
Response to Item #14 of EPA's Section 308 Information Request

Sample Date	Total Al (mg/L)	Total Sb (mg/L)	Total As (mg/L)	Total Cd (mg/L)	Total Cr (mg/L)	Total Cu (mg/L)	Total Fe (mg/L)	Total Pb (mg/L)	Total Hg (mg/L)	Total Ni (mg/L)	Total Se (mg/L)	Total Ag (mg/L)	Total Zn (mg/L)	TSS (mg/L)
Pre-Maintenance														
2/8/2012	2.6	<0.006	<0.01	<0.001	0.0057	0.01	1.8	0.0078	<0.0002	<0.01	<0.01	<0.005	0.12	26
2/15/2012	3.3	<0.006	<0.01	<0.001	0.0099	<0.01	1.6	0.0053	<0.0002	<0.01	<0.01	<0.005	0.1	15
2/22/2012	1.6	<0.006	<0.01	<0.001	<0.005	<0.01	1.4	0.008	<0.0002	<0.01	<0.01	<0.005	0.077	23
2/29/2012	6.4	<0.006	<0.01	<0.001	0.022	0.027	4.7	0.012	<0.0002	<0.01	<0.01	<0.005	0.18	79
Post-Maintenance														
4/25/2012	2.4	<0.006	<0.01	<0.001	<0.005	0.021	3.0	0.021	<0.0002	<0.010	<0.01	<0.005	0.160	170
5/2/2012	1.7	<0.006	<0.01	<0.001	<0.005	0.017	1.8	0.016	<0.0002	<0.001	<0.01	<0.005	0.130	150
5/9/2012	1.2	<0.006	<0.01	<0.001	<0.005	0.013	1.7	0.012	<0.0002	<0.001	<0.01	<0.005	0.087	62
5/16/2012	1.5	<0.006	<0.01	<0.001	<0.005	0.016	2.0	0.016	<0.0002	<0.001	<0.01	<0.005	0.120	78
5/23/2012	6.3	<0.006	<0.01	<0.001	0.0077	0.021	5.6	0.017	<0.0002	<0.002	<0.01	<0.005	0.170	730
5/30/2012	2.8	<0.006	<0.01	<0.001	<0.005	0.014	2.9	0.01	<0.0002	0.0076	<0.01	<0.005	0.110	45

NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 002
Monthly Reporting

Monitoring Period End Date	Flow (Mgal/day)		TSS (mg/L)		pH (SU)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Min	Max
Jan-09	No Discharge					
Feb-09	No Discharge					
Mar-09	No Discharge					
Apr-09	No Discharge					
May-09	No Discharge					
Jun-09	No Discharge					
Jul-09	No Discharge					
Aug-09	No Discharge					
Sep-09	No Discharge					
Oct-09	No Discharge					
Nov-09	No Discharge					
Dec-09	No Discharge					
Jan-10	No Discharge					
Feb-10	No Discharge					
Mar-10	No Discharge					
Apr-10	0.00288	0.00288	27	27	7.0	7.0
May-10	No Discharge					
Jun-10	0.0029	0.0029	27	27	7.0	7.0
Jul-10	No Discharge					
Aug-10	No Discharge					
Sep-10	No Discharge					
Oct-10	No Discharge					
Nov-10	No Discharge					
Dec-10	No Discharge					
Jan-11	No Discharge					
Feb-11	No Discharge					
Mar-11	No Discharge					
Apr-11	No Discharge					
May-11	No Discharge					
Jun-11	No Discharge					
Jul-11	No Discharge					
Aug-11	No Discharge					
Sep-11	No Discharge					
Oct-11	No Discharge					
Nov-11	No Discharge					
Dec-11	---	---	97	97	6.5	6.5
Jan-12	No Discharge		82	82	No Discharge	
Feb-12	No Discharge		26	26	7.0	7.0
Mar-12	No Discharge					
Apr-12	No Discharge					
May-12	No Discharge					

NPDES Permit No. MA0003531

Jun-12	No Discharge				7.0	7.0
Jul-12	No Discharge				7.1	7.1
Aug-12	No Discharge				7.0	7.0
Sep-12	No Discharge					
Oct-12	No Discharge		130	130	7	7
Nov-12	No Discharge				7	7
Dec-12	No Discharge				6.8	6.8
Jan-13	No Discharge				6.8	6.8
Feb-13	No Discharge				6.8	6.8
Mar-13	No Discharge				6.9	6.9
Apr-13	No Discharge				6.8	6.8
May-13	No Discharge				7	7
Jun-13	No Discharge				6.8	6.8
Jul-13	No Discharge				6.8	6.8
Aug-13	No Discharge				7	7
Sep-13	No Discharge				6.8	6.8
Oct-13	No Discharge				6.9	6.9
Nov-13	No Discharge				6.9	6.9
Dec-13	No Discharge				6.8	6.8
2007 Permit Limits	**Report**	**Report**	**20**	**30**	**6.5**	**8.3**
Min	0.00288	0.00288	26	26	6.5	6.5
Max	0.0029	0.0029	130	130	7.1	7.1
Avg	0.00289	0.00289	64.8	64.8	6.9	6.9
# of measurements	2	2	6	6	22	22

”No Discharge” = Where “No Discharge” shown and no flow is reported, TSS and/or pH values represent samples collected from surface of detention pond.
--- = No value reported

NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 003
Quarterly Reporting

Monitoring Period End Date	Flow (gal/batch)		TSS (mg/L)		Oil & Grease (mg/L)	pH (SU)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max	Min	Max
Mar-09	20	20	3	3	<5	6.7	6.8
Jun-09	20	20	8	8	<5	6.5	6.8
Sep-09	20	20	6.7	6.7	<5	6.8	6.8
Dec-09	20	20	2.4	2.4	35.6	6.5	6.6
Mar-10	20	20	<15	26	<5	6.5	6.8
Jun-10	20	20	<23.5	42	7.9	6.5	6.7
Sep-10	20	20	<10	<10	<5	6.5	7.0
Dec-10	20	20	3.2	3.2	<5	6.5	7.0
Mar-11	20	20	99	99	6.27	6.5	7.0
Jun-11	20	20	32.5	83	5.4	6.5	6.5
Sep-11	20	20	3.3	3.3	<5	6.5	6.5
Dec-11	20	20	<2	<2	5.77	6.0	6.6
Mar-12	20	20	3	3	7.6	6.7	7.0
Jun-12	20	20	2.5	2.5	5	6.8	7.0
Sep-12	20	20	2.5	2.5	<5	6.8	6.9
Dec-12	20	20	<4	<4	<5	6.8	6.8
Mar-13	20	20	7.2	7.2	<4.9	6.7	6.8
Jun-13	20	20	<7.5	11	<5	6.8	7.2
Sep-13	20	20	4.4	4.4	<5	6.8	6.8
Dec-13	20	20	<4.8	<4.8	<4	6.7	7.1
2007 Permit Limits	**Report**	**Report**	**10**	**15**	**15**	**6.5**	**8.3**
Min	20	20	<2	<2	<4.9	6	6.5
Max	20	20	99	99	35.6	6.8	7.2
Avg	20	20	13.7	19.2	10.5	6.61	6.84
# of measurements	20	20	20	20	20	20	20

--- = No value reported

NPDES Permit No. MA0003531

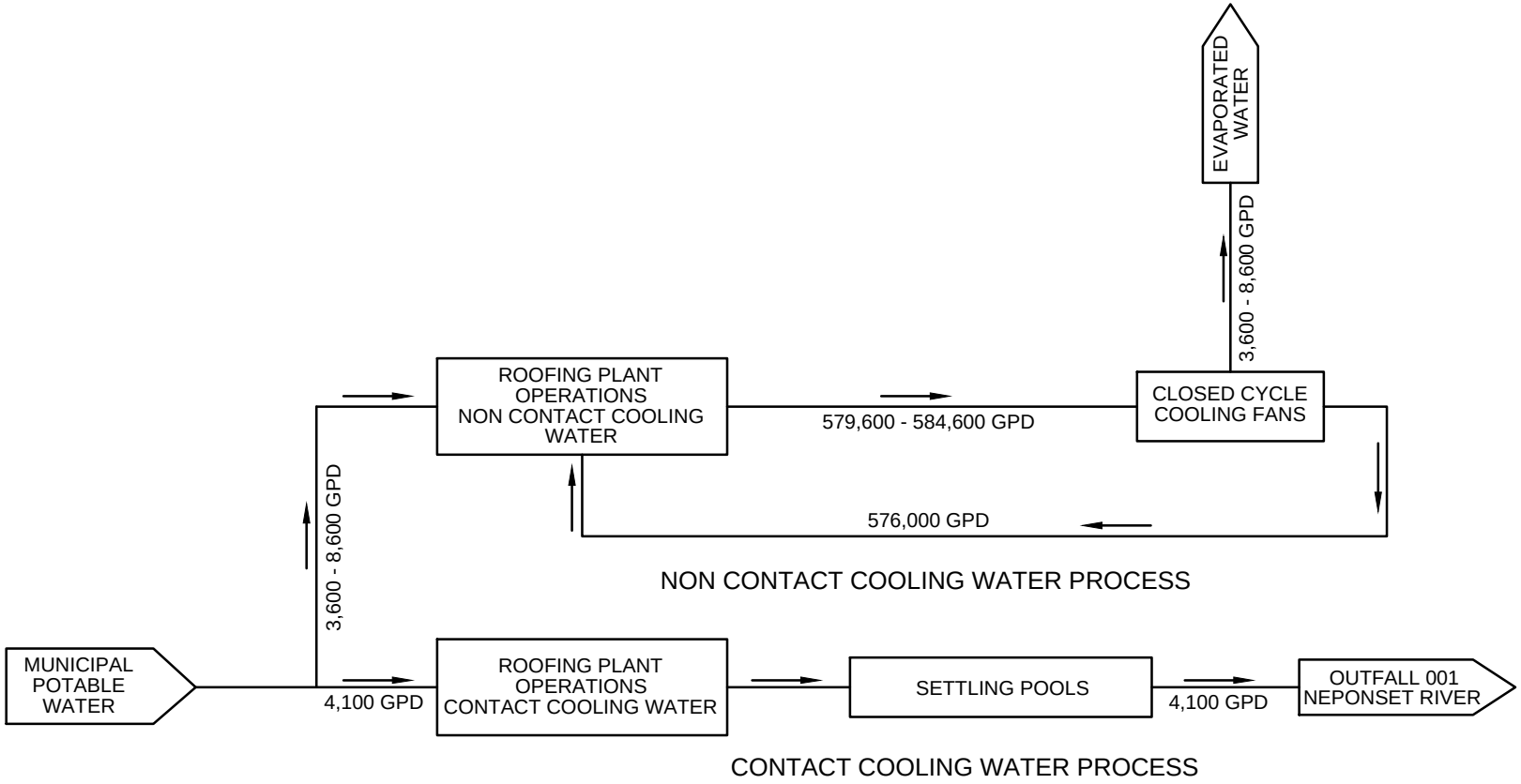
CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 004
Quarterly Reporting

Monitoring Period End Date	Flow (gal/batch)		TSS (mg/L)		Oil & Grease (mg/L)	pH (SU)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max	Min	Max
Mar-09	22	22	<2	2	19.1	6.6	7.0
Jun-09	22	22	12	12	<5	6.5	6.8
Sep-09	22	22	5.4	6.8	<5	6.5	6.9
Dec-09	22	22	2.4	2.4	<5	6.5	6.6
Mar-10	22	22	<10.5	11	<5	6.5	6.8
Jun-10	22	22	<20.5	36	<5	6.5	6.8
Sep-10	22	22	<10	<10	5.38	7.0	7.0
Dec-10	22	22	2	2	<5	6.5	7.0
Mar-11	22	22	<2	2	<5	6.5	7.0
Jun-11	22	22	24.7	33	13.8	6.0	6.5
Sep-11	22	22	4	4	<5	6.5	6.5
Dec-11	22	22	<2	<2	<5	6.0	6.6
Mar-12	22	22	3.5	3.5	<5	6.7	7.0
Jun-12	22	22	16.4	26	<5	6.8	8.0
Sep-12	22	22	5	5	<5	6.8	6.8
Dec-12	22	22	<4	<4	<5	6.8	6.8
Mar-13	22	22	5.2	5.2	<4.9	6.8	6.8
Jun-13	22	22	10	10	11	6.8	6.8
Sep-13	22	22	10	10	<5	6.8	6.8
Dec-13	22	22	<4	<4	18	6.8	6.8
2005 Permit Limits	**Report**	**Report**	**10**	**15**	**15**	**6.5**	**8.3**
Min	22	22	<2	<2	<4.9	6	6.5
Max	22	22	24.7	36	19.1	7	8
Avg	22	22	8.4	10.7	13.5	6.60	6.87
# of measurements	20	20	20	20	20	20	20

--- = No value reported

Attachment 4: Certainteed Process Flow Diagrams

Exhibit 4
AR A.1



NOTES:

CONTACT COOLING WATER FLOW RATE SHOWN IS AVERAGE FLOW RATE PER DAY OF OPERATION FOR 2011.

NON CONTACT COOLING WATER POTABLE WATER FLOW RATE RANGE IS THE ESTIMATED COOLING TOWER MAKE UP WATER RATE BASED UPON 12 HOURS DAY COOLING WATER REQUIRED, AND APPROXIMATELY 25° F TEMPERATURE DELTA.

NO.	ISSUE/DESCRIPTION	BY	DATE

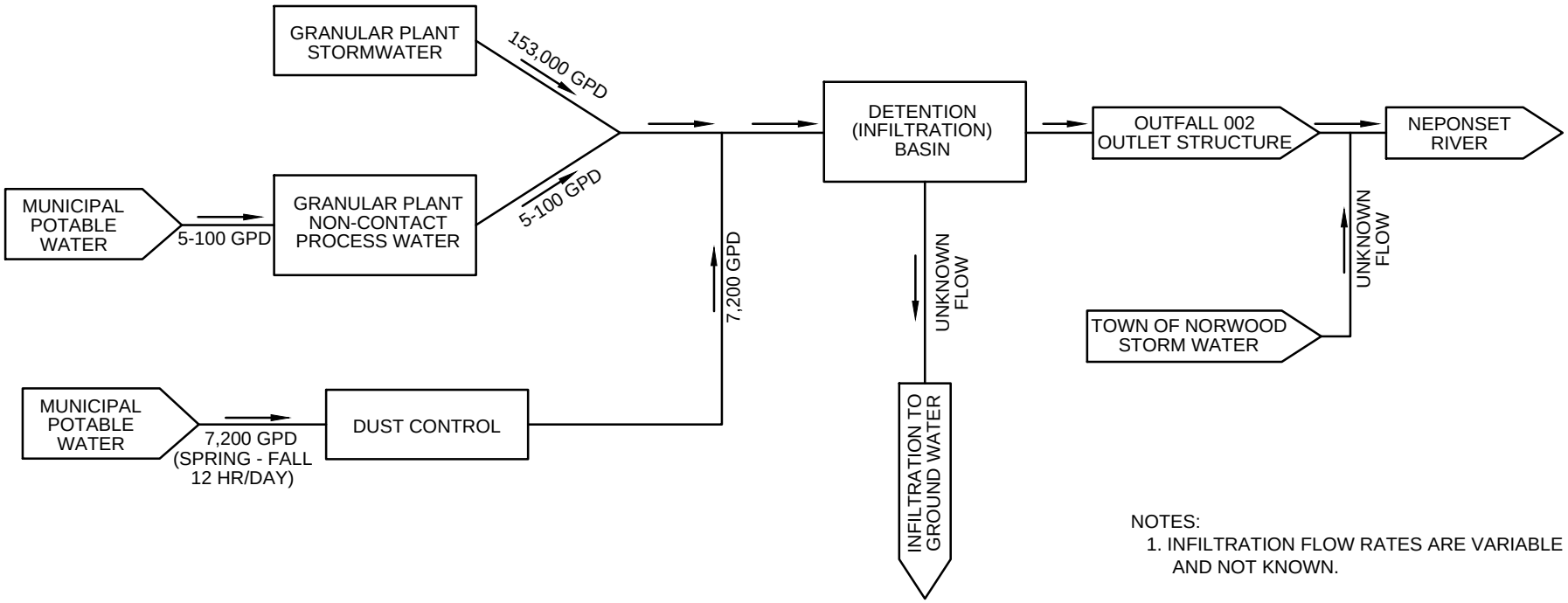
CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

ROOFING PLANT INDUSTRIAL PROCESS AND WASTEWATER
PROCESS FLOW DIAGRAM - OUTFALL 001

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 2
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 12-12-2012	PROJECT NO. 01.0171200.15	REVISION NO.	



NOTES:

1. INFILTRATION FLOW RATES ARE VARIABLE AND NOT KNOWN.
2. GRANULAR PLANT STORMWATER FLOW IS BASED UPON JANUARY 12, 2012 PRECIPITATION DATA AND IS APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

GRANULAR PLANT
PROCESS FLOW DIAGRAM - OUTFALL 002

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
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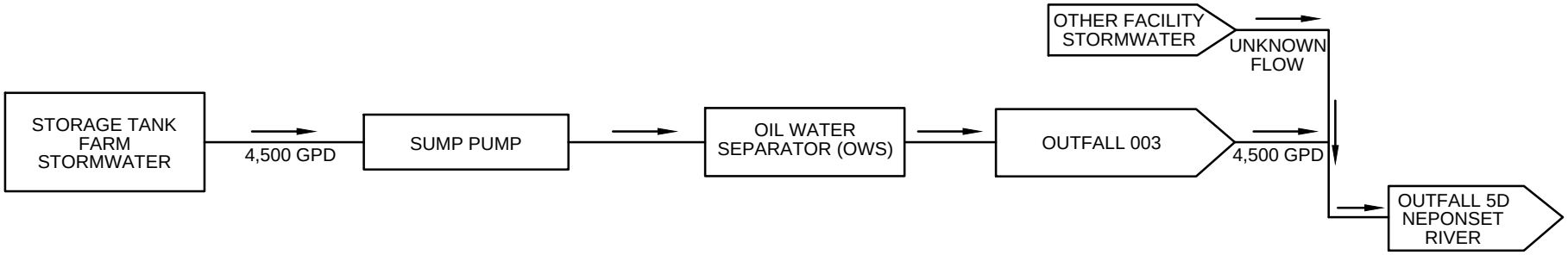
PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 3
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 12-12-2012	PROJECT NO. 01.0171200.15	REVISION NO.	



NOTE:
STORMWATER FLOW RATE IS BASE UPON AUGUST 1, 2012 EVENT AND IS APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

OLD TANK FARM
PROCESS FLOW DIAGRAM - OUTFALL 5D

PREPARED BY:
GZA GeoEnvironmental, Inc.
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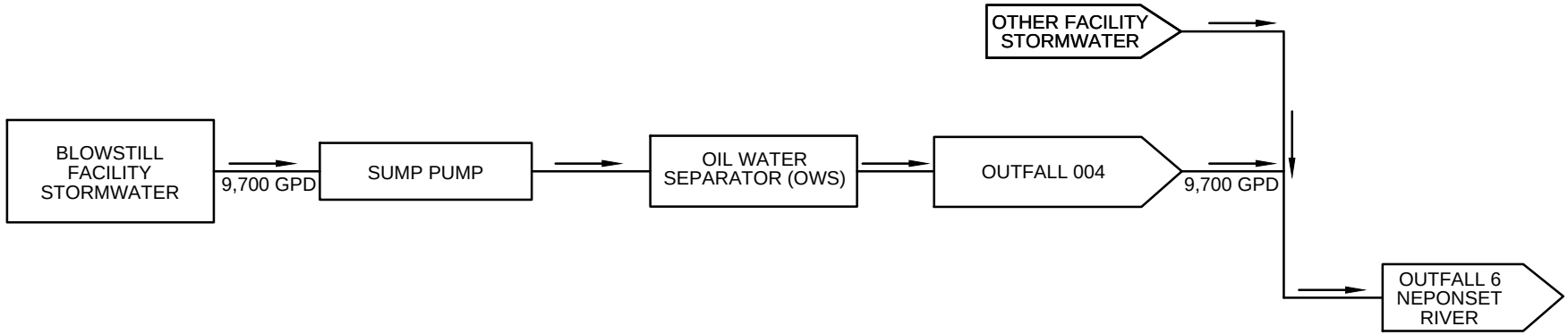
PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 4
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 02-07-2014	PROJECT NO. 01.0171200.15	REVISION NO.	



NOTE:
STORMWATER FLOW RATE IS BASED UPON AUGUST 1, 2012 EVENT AND IS APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

BLOWSTILL FACILITY
PROCESS FLOW DIAGRAM - OUTFALL 6

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 5
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 02-07-2014	PROJECT NO. 01.0171200.15	REVISION NO.	

Attachment 5: Calculation of 7Q10 and Dilution Factor

Estimated 7Q10 at Outfall 001

Nearest U.S. Geological Gauging Station = 01105000 (@ Neponset River)

$7Q10\ Flow_{@Neponset} = 4.5$ cubic feet per second (cfs)

7Q10 Flow at Outfall 001 is given by the ratio of the drainage area to the known $7Q10_{@Neponset}$ such that:

$$\frac{7Q10_{@Neponset}}{Drainage\ Area_{@Neponset}} = \frac{7Q10_{@Outfall001}}{Drainage\ Area_{@Outfall001}}$$

$Drainage\ Area_{@Neponset} = 34.7$ square miles (mi^2)

$Drainage\ Area_{@Outfall001}$[1] $= 25.7\ mi^2$

$7Q10_{@Outfall001} = Q_R$

Therefore:

$$\frac{4.5\ cfs}{34.7\ mi^2} = \frac{Q_R}{25.7\ mi^2}$$

And:

$$Q_R = 4.5\ cfs * \frac{25.7\ mi^2}{34.7\ mi^2} = 3.33\ cfs\ (2.15\ MGD)$$

Dilution Factor

Dilution Factor $= [Q_R + (Q_P * 1.55)]/ (Q_P * 1.55)$
$= [3.33 + (0.04*1.55)]/ (0.04*1.55) = 55$

Where:

Q_R = Estimated 7Q10 for the receiving water at Outfall 001 = 3.33 cfs
Q_P = Maximum permitted flow rate for Outfall 001 = 0.04 MGD
1.55 = Factor to convert MGD to cfs.

[1] Estimated drainage area at Outfall 001 determined using USGS StreamStats in Massachusetts mapping tool at http://water.usgs.gov/osw/streamstats/massachusetts.html

Attachment 6: Temperature Analysis

EPA used the permitted maximum effluent temperature and flow rate and maximum alowable ambient temperature in a steady-state mixing equation to determine if the discharge has reasonable potential cause or contribute to a violation of WQC under critical conditions. EPA used the Massachusetts WQC for maximum temperature and one-third of the receiving water's 7Q10 to determine reasonable potential to be conservative.

$$T_r = [T_dQ_d + T_sQ_s] / Q_r$$

Where:

T_r	=	Downstream temperature (ºF)
T_d	=	Effluent temperature (ºF) = 90º F (permitted daily maximum)
Q_d	=	Effluent flow rate (cfs) = 0.062 cfs (maximum permitted flow rate, 0.04 MGD * 1.55 to convert to cfs)
T_s	=	Temperature of the receiving water (ºF) = 83º F (maximum allowable, which exceeds maximum recorded)[1]
Q_s	=	Receiving water flow rate (cfs) = 1.11 cfs (⅓ of 7Q10)
Q_r	=	Downstream flow rate (cfs) = Qp + Qr = 0.062 cfs + 1.11 cfs = 1.172 cfs

Therefore: $T_r = [(90 \times 0.062) + (83 \times 1.11)] / 1.172$
$T_r = 83.4º$ F

And: $\Delta T = T_r - T_s$
Therefore: $\Delta T = 83.4º - 83º$
$\Delta T = 0.4º$ F

The temperature limit of 90º F included in the Draft Permit is not expected to cause or contribute to an increase in temperature of greater than 5º F in the Neponset River.

EPA then determined the downstream temperature using the permitted discharge temperature and maximum recorded ambient temperature to ensure compliance with the Massachusetts WQS for Class B waters.

$$T_r = [T_dQ_d + T_sQ_s] / Q_r$$

Where:

T_r	=	Downstream temperature (ºF)
T_d	=	Effluent temperature (ºF) = 90º F (permitted daily maximum)
Q_d	=	Effluent flow rate (cfs) = 0.062 cfs (maximum permitted flow rate, 0.04 MGD * 1.55 to convert to cfs)
T_s	=	Upstream temperature (ºF) = 80.6º F (maximum recorded)[1]
Q_s	=	Receiving water flow rate (cfs) = 1.11 cfs (⅓ of 7Q10)
Q_r	=	Downstream flow rate (cfs) = Qe + Qr = 0.062 cfs + 1.11 cfs = 1.172 cfs

Therefore: $T_r = [(90 \times 0.062) + (80.6 \times 1.11)] / 1.172$
$T_r = 81.1º$ F

Therefore, the maximum proposed temperature of the discharge of 90º F is not expected to cause or contribute to a downstream temperature greater than 83º F in the Neponset River.

[1] EPA reviewed available ambient temperature data from the USGS (2000-2007) and Neponset River Watershed Association (2007-2013). The maximum temperature identified at the nearest upstream sampling location, the Holingsworth and Vose dam, Walpole, was 27.0º C (80.6º F) recorded August 11, 2010.

Attachment 7: Metals Analysis

Hardness Analysis[1]

Hardness data used to calculate hardness-dependent metals criteria are from the Facility's Whole Effluent Toxicity (WET) test reports from 2010 through 2013. The hardness values used in calculations below are the median hardness values measured in the Facility's discharge and the Neponset River immediately upstream of the discharge.

Summary of Hardness Data

Monitoring Period End Date	Effluent Hardness (mg/L)[2]	Upstream Hardness (mg/L)
May 31, 2010	25.5	
August 31, 2010	20.5	
May 31, 2011	19	52
August 31, 2011	23	79
May 31, 2012	22	48
August 31, 2012	23	65
May 31, 2013	29	65
August 31, 2013	28	55

EPA determined the estimated downstream hardness used to calculate the criteria as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

C_r	=	Concentration below outfall
Q_d	=	Discharge flow
C_d	=	Discharge concentration
Q_s	=	Upstream flow (i.e., 7Q10)
C_s	=	Upstream concentration
Q_r	=	Streamflow below outfall (effluent + upstream)

Therefore:

$$C_r = \frac{(0.04 \text{ MGD} \times 23 \text{ mg/L}) + (2.15 \text{ MGD} \times 60 \text{ mg/L})}{2.19 \text{ MGD}}$$

$$= \mathbf{59.3 \text{ mg/L}}$$

Freshwater Metals Criteria[3,4]

Using the estimated downstream hardness value of 59.3 mg/L and a conversion factor to convert dissolved to total recoverable metals, EPA determined the chronic and acute criteria for metals as follows:

---

[1] For the mixing equation used to determine estimated downstream concentrations, see *Technical Support Document for Water Quality-based Toxics Control:* EPA/505/2-90-001, 1991.

[2] Effluent hardness for 2010 estimated using the following calculation: mg/L $CaCo_3$ = 2.497 (Ca concentration in mg/L) + 4.118 (Mg concentration in mg/L).

[3] For hardness-dependent criteria, see *National Recommended Water Quality Criteria, Appendix B - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent*: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

[4] 314 CMR 4.05(5)(e) requires that "permit limits will be written in terms of total recoverable metals." Dissolved metal criteria have been converted to total recoverable metals, See *Appendix A - Conversion Factors for Dissolved Metals*: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa

$$\text{Chronic Criteria (Total Recoverable)} = \exp\{m_c [\ln(h)] + b_c\}$$

Where:

m_c = Pollutant-specific coefficient
b_c = Pollutant-specific coefficient
ln = Natural logarithm
h = Hardness of the receiving water

$$\text{Acute Criteria (Total Recoverable)} = \exp\{m_a [\ln(h)] + b_a\}$$

Where:

m_a = Pollutant-specific coefficient
b_a = Pollutant-specific coefficient
ln = Natural logarithm
h = hardness of the receiving water

Therefore:

Chromium(III): Chronic criteria e((0.8190*ln59.3) + (0.6848)) = 56 µg/L (0. 056 mg/L)
Acute criteria e((0.8190*ln59.3) + (3.7256)) = 1,175 µg/L (1.175 mg/L)

Copper: Chronic criteria e((0.8545*ln59.3) + (-1.702)) = 6 µg/L (0.006 mg/L)
Acute criteria e((0.9422*ln59.3) + (-1.700)) = 8.64 µg/L (0.0086 mg/L)

Lead: Chronic criteria e((1.2730*ln59.3) + (-4.7050)) = 1.6 µg/L (0.0016 mg/L)
Acute criteria e((1.2730*ln59.3) + (-1.4600)) = 42 µg/L (0. 042 mg/L)

Zinc: Chronic criteria e((0.8473*ln59.3) + (0.8840)) = 77 µg/L (0.077 mg/L)
Acute criteria e((0.8473*ln59.3) + (0.8840)) = 77 µg/L (0.077 mg/L)

Since aluminum and iron are not hardness-dependent metals, the criteria used in this analysis are the *National Recommended Water Quality Criteria* as follows:

Aluminum: Chronic criteria: 87 µg/L (0.087 mg/L)
Acute criteria: 750 µg/L (0.750 mg/L)

Iron: Chronic criteria: 1,000 µg/L (1.0 mg/L)

Projected Effluent Concentrations[5]

EPA used metals data from the monthly monitoring and WET tests to determine the potential for discharges of metals from the Facility to cause or contribute to a violation of water quality criteria (see Attachment 3). EPA projected the maximum effluent concentration by calculating the 99th percentile measurement of the effluent data from 2009 through 2013. EPA then calculated the 95th percentile concentration to characterize the maximum monthly average concentration. EPA calculated these projections without the available dilution in the receiving water, to be conservative.

Chromium(III): 95th percentile concentration = 23.62 µg/L
99th percentile concentration = 32.29 µg/L

Copper: 95th percentile concentration = 47.39 µg/L

[5]The procedure used to obtain the 95th and 99th percentile projections is the standard method described in EPA's *Technical Support Document for Water Quality-based Toxics Control:* EPA/505/2-90-001, 1991.

99th percentile concentration = 74.75 µg/L

Lead: 95th percentile concentration = 1.66 µg/L
99th percentile concentration = 2.09 µg/L

Zinc: 95th percentile concentration = 18.32 µg/L
99th percentile concentration = 20.95 µg/L

Aluminum: 95th percentile concentration = 3,904.46 µg/L
99th percentile concentration = 6,708.56 µg/L

Iron: 95th percentile concentration = 3,990 µg/L

Ambient Concentrations

EPA used ambient concentration data for the receiving water immediately upstream of the discharge from the Facility's WET tests for 2010 through 2013 for aluminum, copper, lead, and zinc. Ambient concentration data for the receiving water from 2009 were collected and validated by MassDEP. These data were collected from a MassDEP monitoring location upstream of the Facility in Walpole. They are expressed in dissolved form.

Summary of Neponset River Metals Concentrations

Sample Date	Total Al (µg/L)	Total Cr (µg/L)	Total Cu (µg/L)	Total Pb (µg/L)	Total Zn (µg/L)
June 2009	<40	0.25	0.98	0.42	3.3
July 2009	<40	0.29	1.4	0.68	4.9
August 2009	<40	0.28	3.4	0.27	3.6
September 2009	<50	0.24	1.6	0.31	2.0
May 2011	39	---	3.1	1.6	6.6
August 2011	19	---	1.8	1.2	<2.5
May 2012	47	---	2.7	2.4	7.6
August 2012	14	---	2.4	0.66	4.0
May 2013	<200	---	<10	<5	<10
August 2013	<200	---	1.9	1.7	<10
Median Value	39*	0.265	2.15	0.94	4.45

* The actual median value of the dataset is <40; therefore, EPA utilized the nearest detected value <40 to represent the ambient concentration for aluminum.

Reasonable Potential Analysis

EPA used the projected effluent concentrations and ambient concentrations of metals in a steady-state mixing equation to determine if the discharge has reasonable potential cause or contribute to a violation of WQC under critical conditions. The standard approach to determine reasonable potential is to consider ambient concentrations immediately upstream of the influence of the discharge. To be conservative, EPA used the median values of the total recoverable analysis for aluminum, copper, lead, and zinc shown above to determine reasonable potential for metals as follows:

$$\text{Reasonable Potential Analysis for Acute Criteria: } C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

C_r = Concentration below outfall
Q_d = Discharge flow

C_d = 99th percentile effluent concentration
Q_s = Upstream flow
C_s = Upstream concentration
Q_r = Streamflow below outfall (effluent + upstream)

Reasonable Potential Analysis for Chronic Criteria: $C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$

Where:

C_r = Concentration below outfall
Q_d = Discharge flow
C_d = 95th percentile effluent concentration
Q_s = Upstream flow
C_s = Upstream concentration
Q_r = Streamflow below outfall (effluent + upstream)

Therefore:

Aluminum: Chronic C_r = $\frac{(0.04 \text{ MGD} \times 3{,}904.46 \text{ µg/l}) + (2.15 \text{ MGD} \times 39 \text{ µg/l})}{2.19 \text{ MGD}}$
= 110 µg/L > 87 µg/L (chronic criterion)
= Reasonable potential

Acute C_r = $\frac{(0.04 \text{ MGD} \times 6{,}708.56 \text{ µg/L}) + (2.15 \text{ MGD} \times 39 \text{ µg/L})}{2.19 \text{ MGD}}$
= 161 µg/L < 750 µg/L (acute criterion)
= No reasonable potential

Copper: Chronic C_r = $\frac{(0.04 \text{ MGD} \times 47.39 \text{ µg/l}) + (2.15 \text{ MGD} \times 2.15 \text{ µg/l})}{2.19 \text{ MGD}}$
= 2.98 µg/L < 6 µg/L (chronic criterion)
= No reasonable potential

Acute C_r = $\frac{(0.04 \text{ MGD} \times 74.75 \text{ µg/L}) + (2.15 \text{ MGD} \times 2.15 \text{ µg/L})}{2.19 \text{ MGD}}$
= 3.48 µg/L < 8.64 µg/L (acute criterion)
= No reasonable potential

Lead: Chronic C_r = $\frac{(0.04 \text{ MGD} \times 1.66 \text{ µg/l}) + (2.15 \text{ MGD} \times 0.94 \text{ µg/l})}{2.19 \text{ MGD}}$
= 0.95 µg/L < 1.6 µg/L (chronic criterion)
= No reasonable potential

Acute C_r = $\frac{(0.04 \text{ MGD} \times 2.09 \text{ µg/L}) + (2.15 \text{ MGD} \times 0.94 \text{ µg/L})}{2.19 \text{ MGD}}$
= 0.96 µg/L < 42 µg/L (acute criterion)
= No reasonable potential

Zinc: Chronic C_r = $\frac{(0.04 \text{ MGD} \times 18.31 \text{ µg/l}) + (2.15 \text{ MGD} \times 4.45 \text{ µg/l})}{2.19 \text{ MGD}}$
= 4.7 µg/L < 77 µg/L (chronic criterion)
= No reasonable potential

Acute C_r = $\frac{(0.04 \text{ MGD} \times 20.95 \text{ µg/L}) + (2.15 \text{ MGD} \times 4.45 \text{ µg/L})}{2.19 \text{ MGD}}$
= 4.75 µg/L < 77 µg/L (acute criterion)
= No reasonable potential

Since the total recoverable analysis for chromium was not available, EPA used the dissolved metal concentration. These data are considered less conservative than total recoverable data, but more conservative than assuming the upstream ambient concentration is zero in the absence of data.

Therefore:

Chromium(III): Chronic C_r = $\frac{(0.04 \text{ MGD} \times 23.62 \text{ µg/l}) + (2.15 \text{ MGD} \times 0.265 \text{ µg/l})}{2.19 \text{ MGD}}$

= 0.69 µg/L < 56 µg/L (chronic criterion)

= No reasonable potential

Acute C_r = $\frac{(0.04 \text{ MGD} \times 32.29 \text{ µg/L}) + (2.15 \text{ MGD} \times 0.265 \text{ µg/L})}{2.19 \text{ MGD}}$

= 0.85 µg/L < 1,175 µg/L (acute criterion)

= No reasonable potential

Since upstream ambient concentrations of iron were unavailable, EPA did not include ambient concentrations of iron in the calculation to determine reasonable potential.

Therefore:

Iron: Chronic C_r = $\frac{(0.04 \text{ MGD} \times 3{,}990 \text{ µg/l}) + (2.15 \text{ MGD})}{2.19 \text{ MGD}}$

= 73.9 µg/L < 1,000 µg/L (chronic criterion)

= No reasonable potential

Calculation of Effluent Limits

As calculated above, chronic discharges of aluminum are expected to have reasonable potential to cause or contribute to a violation of WQC under critical conditions. EPA determined the applicable effluent limit using the steady-state mixing equation above by setting the maximum allowable downstream concentration as the water quality criterion and solving for effluent concentration. To be conservative, EPA used the median ambient aluminum concentration to determine the effluent limit for aluminum as follows:

$$\text{Effluent Limit: } C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

Where:

C_r	=	Applicable water quality criterion (WQC)
Q_d	=	Discharge flow
C_d	=	Effluent concentration which will meet WQC
Q_s	=	Upstream flow
C_s	=	Upstream concentration
Q_r	=	Streamflow below outfall (effluent + upstream)

Therefore:

Aluminum: Chronic C_d = $\frac{(2.19 \text{ MGD} \times 87 \text{ µg/l}) - (2.15 \text{ MGD} \times 39 \text{ µg/l})}{0.04 \text{ MGD}}$

= 2,667 µg/L (2.6 mg/L) (average monthly limit, total recoverable)

NPDES Permit No. MA0003531

Attachment 8: Summary of Essential Fish Habitat Designations

Name of Estuary/ Bay/ River: Boston Harbor, Massachusetts

10’ x 10’ Square Coordinates:

Boundary	North	East	South	West
Coordinate	42° 20.0’ N	71° 00.0’ W	42° 10.0’ N	71° 10.0’ W

Square Description (i.e. habitat, landmarks, coastline markers): Waters within the Atlantic Ocean within the square within Massachusetts Bay and within Boston Harbor affecting South Boston, MA., on the north, south to Quincy MA., including waters east of Dorchester, MA., Squantum Point, Thompson Island (up to its northwest tip), and within Dorchester Bay. Also affected are the Neponset River and Old Harbor.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod *(Gadus morhua)*	X	X	X	X
haddock *(Melanogrammus aeglefinus)*	X	X		
pollock *(Pollachius virens)*	X	X	X	X
whiting *(Merluccius bilinearis)*	X	X	X	X
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*	X	X	X	X
white hake *(Urophycis tenuis)*	X	X	X	X
redfish *(Sebastes fasciatus)*	n/a			
witch flounder *(Glyptocephalus cynoglossus)*				
winter flounder *(Pseudopleuronectes americanus)*	X	X	X	X
yellowtail flounder *(Limanda ferruginea)*	X	X	X	X
windowpane flounder *(Scophthalmus aquosus)*	X	X	X	X
American plaice *(Hippoglossoides platessoides)*	X	X	X	X
ocean pout *(Macrozoarces americanus)*	X	X	X	X
Atlantic halibut *(Hippoglossus hippoglossus)*	X	X	X	X
Atlantic sea scallop *(Placopecten magellanicus)*	X	X	X	X
Atlantic sea herring *(Clupea harengus)*		X	X	X
monkfish *(Lophius americanus)*				

bluefish *(Pomatomus saltatrix)*			X	X
long finned squid *(Loligo pealeii)*	n/a	n/a	X	X
short finned squid *(Illex illecebrosus)*	n/a	n/a	X	X
Atlantic butterfish *(Peprilus triacanthus)*	X	X	X	X
Atlantic mackerel *(Scomber scombrus)*	X	X	X	X
summer flounder *(Paralichthys dentatus)*				X
scup *(Stenotomus chrysops)*	n/a	n/a	X	X
black sea bass *(Centropristis striata)*	n/a		X	X
surf clam *(Spisula solidissima)*	n/a	n/a	X	X
ocean quahog *(Artica islandica)*	n/a	n/a		
spiny dogfish *(Squalus acanthias)*	n/a	n/a		
tilefish *(Lopholatilus chamaeleonticeps)*				
bluefin tuna *(Thunnus thynnus)*			X	X

n/a = The species does not have this lifestage in its life history (dogfish/ redfish), or has no EFH designation for this lifestage (squids, surf clam, ocean quahog). With regard to the squids, the surf clam and the ocean quahog, juvenile corresponds with pre-recruits, and adult corresponds with recruits in these species' life histories.

Source: http://www.nero.noaa.gov/hcd/index2a.htm

Response to Public Comments

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft NPDES Permit, #MA0003531. The response to comments explains and supports the EPA determinations that form the basis of the final permit. From May 30, 2014 to July 12, 2014, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comments on a draft NPDES permit, #MA0003531, developed pursuant to an individual permit application from Certainteed Corporation, a division of Saint-Gobain ("Certainteed") for the re-issuance of a National Pollutant Discharge Elimination System ("NPDES") permit to discharge treated cooling water from Outfall 001, treated non-contact cooling water, process water, boiler condensate, boiler blowdown, and stormwater from Outfall 002, and treated stormwater from Outfalls 003 and 004 to the Neponset River (Segment MA73-01) in Norwood, Massachusetts.

After a review of the comments received, EPA and MassDEP have made a final decision to issue this permit authorizing these discharges. The Final Permit is substantially identical to the Draft Permit that was available for public comment.

Although EPA's decision-making process has benefitted from the comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make minor changes in response to comments which are listed below. The analyses underlying these changes are explained in the responses to individual comments that follow and are reflected in the Final Permit. Comments are paraphrased.

Copies of the Final Permit may be obtained by writing or calling EPA's NPDES Industrial Permits Section (OEP 06-1), Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Boston, MA 02109-3912; Telephone: (617) 918-1989.

Summary of Changes in the Final Permit

1. Cover Page

Deletion: The permit effective date sentence which stated, "If no comments are received, this permit shall become effective upon signature," has been removed, as public comments were received.

2. Part I.A.

Addition: Specification regarding the authorized effluent discharge location has been added to Part I.A.2. The corresponding sampling location specified in the sample requirement for Outfall 002 (footnote 1) has been corrected as a result.

Correction: The flow rate limit for Outfall 004 in Part I.A.4. has been corrected. The flow rate limit is 100 gallons per minute (gpm).

Change: The sample requirement for flow in Part I.A.1. (footnote 4) has been changed to specify that continuous monitoring is defined as collection of one data point per hour.

Addition: Total flow, which is required to be recorded using a flow meter for Outfall 001, Outfall 003, and Outfall 004 has been added to the table in Part I.A.1., I.A.3. and I.A.4.

Change: The sample requirements for total suspended solids and total phosphorus have been changed from composite to grab samples, at the specified frequency when a discharge occurs. The portion of footnote 3 pertaining to composite samples has been removed as a result.

Change: The parameters antimony, iron, manganese, chromium, calcium, magnesium and phosphorus have been moved in the tables for Part I.A.1 and I.A.2. to WHOLE EFFLUENT TOXICITY and WHOLE EFFLUENT TOXICITY TEST, RECEIVING WATER CHEMICAL ANALYSIS. The applicable corresponding footnotes, footnote 16 and 17, have been combined as a result.

Correction: Part I.A. footnote 4 "The Permittee shall document total flow recorded by the flow meters for Outfalls 001, 002 and 003 and provide such information to EPA and MassDEP upon request" has been corrected to "The Permittee shall report total flow recorded by the flow meters for Outfalls 001, 003 and 004." The requirement to provide such information to EPA and MassDEP upon request has been removed.

Correction: Footnote 16 has been corrected to include total recoverable aluminum in the list of parameters required for 100% effluent and receiving water control samples.

3. Part I.B.

Addition: A prohibition has been added to the discharge location for Outfall 002.

4. Part I.E.

Change: The MassDEP address provided in Part I.E.1.b.i. has been changed to MassDEP in Boston and the MassDEP address provided in Part I.E.1.c.iii. has been changed to MassDEP's new address in Worcester.

Corrections

Several typographical corrections were made to the Final Permit that include spelling or grammar correction, adjustment in line spacing, adjustment in sentence spacing, and adjustment in numbering format. No further rationale is warranted.

Public Comments

Comments submitted by Patrick Widman, Plant Manager, Certainteed:

Comment A1:

Part I.A.1. Table 1 indicates that flow rate monitoring at this outfall has been changed from weekly to continuous. Footnote #4 states that flow rate data should be collected once a week on the same day and time each week. The frequency of continuous flow rate monitoring is not defined. We request that "continuous monitoring" be defined as one data point per hour.

Response to Comment A1:

EPA has made the requested change in the final permit.

Comment A2:

Part I.A.2., Table 2 includes monthly sampling requirements for pH and Total Suspended Solids. Outfall 002 occurs after a control device with a significant dwell time and recharging substantially to groundwater without discharging. There has not been a discharge at this outfall since 2012. Based on the operations and maintenance of the area that has the ability to discharge to this outfall, there may never be another discharge. Accordingly, we request the sampling frequency be changed to "when a discharge occurs."

Response to Comment A2:

The draft permit required monthly sampling when a discharge occurs. EPA believes this is consistent with the change requested, but further defines a frequency for sample collection in the event of a discharge. As such, the sampling requirement as included in the permit requires one sample during a month in which one or more discharges occurs. In a month where a discharge does not occur, no sample is required. Therefore, final permit frequency has not been changed.

However, EPA has provided additional clarification in Part I.A.2. to better define discharges and samples for Outfall 002. The discharge point to the Neponset River is not the required sampling location for this outfall, as the facility effluent has already co-mingled with non-facility effluent at the discharge point to the Neponset River (Outfall 002). Such samples are not representative of the nature and quality of the effluent generated at the facility.

In addition, the treatment system, that is, the detention pond located adjacent to the north side of Pleasant Street, contains multiple structures by which water in the pond could exit the pond. The discharge point and sampling location allowed in the permit is the cylindrical overflow structure located near, but not along the east edge of the pond.

Routine discharges of effluent by way of any other structure, particularly the concrete emergency overflow slab located at the east edge of the pond, are not authorized by this permit. Routine discharges are not considered emergency conditions. Emergency conditions would, at a minimum exceed the design storm (the storm during which the retention time is expected to be exceeded by the input volume) of the detention pond, noted in comments dated December 5, 1996 from David A. LaBelle to Victor Alvarez, as a 100 year storm. As the concrete emergency overflow slab is situated at an elevation approximately 4 feet higher than the cylindrical concrete overflow structure and the 100 year design storm for the detention pond is expected to occur relatively infrequently, routine discharges are expected to occur only through the cylindrical concrete overflow structure. Storm events that exceed the 100 year 24-hour design storm would be expected to require use of the concrete emergency overflow slab. Water exiting the detention pond by any other means excepting infiltration, evaporation, or dewatering during maintenance activities, would indicate the detention pond is not functioning as designed such that maintenance is required.

Therefore, the final permit also includes clarification that, with specific exceptions defined in Part II. Standard Conditions, discharges from Outfall 002 via the emergency overflow slab are prohibited. This prohibition is included in Part I.B. of the final permit.

Comment A3:

Part I.A.2, Table 2 includes a requirement to collect a composite sample for Total Suspended Solids. Due to the limited discharge duration at this outfall we request that this sample requirement be changed to a grab sample and only when a discharge occurs.

Response to Comment A3:

EPA has made the requested change in the final permit. While composite samples are generally more representative of the variability in water quality of stormwater, given the expected frequency and duration of discharge, and the relatively long retention time of stormwater in the detention basin, EPA agrees that a grab sample is appropriate so long as the sample is collected within the specified timeframe. The sole remaining composite sample for total phosphorus, has been changed for consistency and simplicity.

Comment A4:

There is a typo in footnote #4 which indicates that flow in this outfall is metered. This statement contradicts the sampling requirements in Table 2 and the last sentence of footnote #4 which states that the flow rate for this outfall shall be an estimate.

Response to Comment A4:

The typographical error in Part I.A. footnote 4 was the inclusion of total flow requirements using a flow meter for Outfall 002 rather than Outfall 004. Outfall 002 does not require a flow meter and the flow rate requirement remains an estimate. To further

clarify the total flow and flow rate requirements, EPA has corrected footnote 4 and has added the total flow requirements to the tables for the applicable outfalls. As the Permittee is already required to record total flow, to provide greater clarity, specificity and eliminate duplicity, rather than separately requiring submission of total flow data upon request, the final permit requires that these data be included with the Discharge Monitoring Reports. Therefore, "The Permittee shall document total flow recorded by the flow meters for Outfalls 001, 002 and 003 and provide such information to EPA and MassDEP upon request" has been corrected to "The Permittee shall report total flow recorded by the flow meters for Outfalls 001, 003 and 004."

Comment A5:

The draft NPDES permit contains an average monthly limit of 20 mg/L and a maximum daily limit of 30 mg/L for TSS at Outfall 002. However, Outfall 001 has an average monthly limit of 40 mg/L and a maximum daily limit of 70 mg/L. In addition, there has not been a discharge from Outfall 002 since 2012. CertainTeed has performed maintenance in the area that leads to Outfall 002 further reducing the likelihood of any discharges. We find no design data or historical record that supports these lower limits. We believe the original limits to have been established in error. Further the derived BPT and BAT for Outfall 001 support a higher TSS limit. We request the TSS limit for Outfall 001 be changed to be equal to Outfall 001.

Response to Comment A5:

EPA believes the commenter has requested to change the TSS limit for *Outfall 002* to be equal to Outfall 001. The average monthly limit of 20 mg/L and a maximum daily limit of 30 mg/L for total suspended solids at Outfall 002 remain unchanged. However, EPA has provided additional clarification in Part I.A.2. regarding sampling, described in Response to Comment A2, above.

With regard to the frequency of discharge and completion of maintenance, EPA is aware of the limited frequency of discharge and the maintenance performed on the treatment system for Outfall 002. Since January 1, 2012, the facility has reported TSS discharges on only three occasions. Operation and maintenance of the treatment systems at the facility are and continue to be required by the NPDES permit (see Part I.A.13. and Part II.B.1.). Proper operation and maintenance controlling the effluent such that discharges meet the limitations in the permit, regardless of the frequency of occurrence, does not translate to allowing increased pollutant load through less stringent numeric effluent limitations. Similarly, a reduced frequency of discharge does not equate to less stringent effluent limitations.

Further, the Neponset River is impaired for conditions attributed to TSS and related parameters (i.e., turbidity). According to historical MassDEP water quality assessments (Neponset River Watershed 1994 Resource Assessment Report), and noted in correspondence between the facility and the agencies in the administrative record, TSS discharges from Outfall 002 were at one time a noted source of the impairment. TSS

control was also part of enforcement action taken against the permittee at the time. Through administrative order, settlement and the limitations in NPDES permits, the TSS levels at Outfall 002 have been significantly reduced and are no longer noted in the most recent water quality assessment report for the Neponset River. The 1997 Fact Sheet states that TSS and pH "are regulated based on Massachusetts state certification requirements" (page 5). Specifically, Massachusetts' water quality standards contain anti-degradation requirements. The effluent limitations have contributed to improved water quality conditions in the Neponset River. If, in subsequent NPDES permits, EPA allowed the discharge of TSS which would cause further degradation or degrade the level of quality already achieved, Massachusetts' anti-degradation requirements, and therefore the requirements for state certification, are not met. Finally, anti-backsliding requirements do not allow less stringent limitations in re-issued NPDES permits, unless certain specific exceptions are met. EPA finds no exception to the anti-backsliding requirements. As such, any less stringent limitations at Outfall 002 for total suspended solids would violate these regulations.

As noted in the draft permit fact sheet, the support determinations employed by MassDEP during the Neponset River Resource Assessment and Boston Harbor Hydrologic and Water Quality Investigation, TSS levels greater than 80 mg/L have reasonable potential to cause or contribute to an excursion above the narrative WQC for Class B waters. This support determination in greater detail notes that TSS levels below 25 mg/L are "acceptable"; levels between 25 and 80 mg/L are "cause for concern"; and levels greater than 80 mg/L are "definite problems" for interests protected under Class B waters in the MA SWQS. The combination of multiple outfalls contributing TSS loads to the Neponset River, discharged at or below their current limitations, would not be expected to violate Massachusetts' water quality standards relative to these benchmarks. However, increasing TSS pollutant load to the extent requested (up to a daily maximum of 70 mg/L at four outfalls) at maximum discharge volumes would be expected to exceed these benchmarks and therefore violate Massachusetts' water quality standards.

With regard to the basis for the existing limitations at Outfall 002, the commenter is incorrect that no design data or historical record supports the limitations and that the existing limitations were established in error. The previous facility owner and operator, Bird Incorporated, was required to submit to EPA a facilities plan for stormwater treatment system improvement and a report proposing interim operational improvements in accordance with Administrative Order Docket No. 93-38 dated September 28, 1993. The detention pond associated with Outfall 002 was designed, approved and installed as a result of this order. Comments dated December 5, 1996 from David A. LaBelle to Victor Alvarez in response to issuance of the draft permit (finalized in 1997), note that discharges to Outfall 002 occur "during a significant storm event (100 yr.) therefore monitoring would be limited to those rare events." The 2005 permit fact sheet further states that the TSS "limits are maintained in the permit as required by antibacksliding regulations" and ensure that "the discharge will not violate state water quality standards pertaining to solids (see 314 Code of Massachusetts Regulations (CMR) 4.05(3)(b)5.)" (see non-numbered page 6).

As reemphasized in the fact sheet accompanying the draft permit, these limitations are technology-based effluent limitations that have been established using best professional judgment. When establishing TBELs using BPJ, a permit writer considers, among other factors, the type of effluent and the treatment applied, including expected concentrations of total suspended solids in effluent consisting of mostly stormwater runoff prior to treatment, and the removal efficiency a particular type of treatment achieves. The effluent limitations for Outfall 002 are based on the existing treatment technology on site. EPA has not required modification of the existing treatment system or installation of additional treatment in the reissued permit.

The treatment technology applied to TSS at Outfall 002 consists of retention and infiltration. In MassDEP's Stormwater Policy Handbook (1997), as cross-referencing Schueler (1996) and EPA (1993), an infiltration basin is capable of achieving a design removal rate of 80% of the annual TSS load entering the treatment system. For stormwater associated with industrial activity for the industrial sector applicable to the granule processing plant, EPA's multi-sector general permit requires control of total suspended solids through best management practices, including a stormwater pollution prevention plan, that achieves a benchmark value (above which monitoring and adjustments to BMPs are triggered). This benchmark value, 100 mg/L, is therefore expected to be the maximum long term average at the facility. An 80% removal efficiency through application of additional treatment in the infiltration basin results in the reduction of TSS equal to the monthly average limit included in the permit, 20 mg/L according to the following:

(removal rate %) x (annual TSS load entering the BMP)

The daily maximum limit is permitted slightly above this value, assuming that the monthly average limit can still be met with small variability in daily maximum values.

Therefore, the TSS limits at Outfall 002 for stormwater and potential *de minimis* quantities of non-contact process water, boiler condensate and boiler blowdown from operations within the mineral mining industrial category (SIC code 3295) have not been changed, as requested, to be equal to the TSS limits at Outfall 001 for contact process water from operations within the asphalt roofing industrial category (SIC code 2952).

Comment A6:

Part I.A.3, Table 3 requires composite samples for Total Suspended Solids and Phosphorus. We request that all sampling requirements for this outfall be changed to grab samples "when a discharge occurs." This outfall is a manually initiated discharge.

Response to Comment A6:

EPA has made the requested change in the final permit. While composite samples are generally more representative of the variability in water quality of stormwater, given the batch nature of the discharge, and the ability to store stormwater in the oil/water

separator, EPA agrees that grab samples are appropriate so long as the samples are collected within the specified timeframe.

Comment A7:

Part I.A.3, Table 3 requires that flow rate be measured with a meter. The pump for this outfall is designed for a maximum flow rate of 20 gpm. We request that the requirement to add a meter to this outfall be removed.

Response to Comment A7:

The draft permit fact sheet states that the Permittee is required to "report the number of discharge events for Outfall 003 and 004, and employ the use of a flow meter to record the total flow and flow rate through the OWSs to control the intake and discharge of stormwater through the OWSs such that the design flow capacity is not exceeded". EPA notes that while the requirements to report the number of discharge events, employ the use of a flow meter to record the flow rate, and report the flow rate were included in the draft permit, the requirement to report the total flow was inadvertently omitted. EPA has added total flow to Part I.A.3.

While the maximum design flow rate of the treatment system will not exceed the daily maximum flow rate limit so long as the system is operated properly, recording and reporting total flow using a totalizer or similar device is needed to better quantify the actual quantity of effluent discharged from Outfall 003. This information further enables EPA to better quantify the loading of pollutants to the Neponset River. As TSS is specifically linked to multiple impairments in the Neponset River, EPA maintains that accurate quantification is necessary to ensure the effluent limitations meet water quality standards. Therefore, EPA has included additional clarification in the final permit regarding the flow meter requirement.

Comment A8:

The draft NPDES permit contains a maximum daily limit of 20 mg/L for TSS at Outfall 003. However, Outfall 001 has a maximum daily limit of 70 mg/L. We find no design data or historical record that supports these lower limits. We believe the original limits to have been established in error. Further the derived BPT and BAT for Outfall 001 support a higher TSS limit. We request the TSS limit for Outfall 001 be changed to be equal to Outfall 001.

Response to Comment A8:

EPA believes the commenter has requested to change the TSS limit for *Outfall 003* to be equal to Outfall 001. The maximum daily limit of *15 mg/L* for total suspended solids at Outfall 003 remains unchanged. These limits were first established in the 1997 permit reissuance. As with TSS limits established for Outfall 002, the permit record notes that the technology-based limits were established using best professional judgment. These

limitations added additional technological controls on TSS, the source of existing impairment in the Neponset River, where controls were previously absent. Similarly, were EPA to increase the allowable TSS load to the Neponset, the existing impairments related to TSS would be expected to degrade. Further, as the 2005 and draft permit fact sheet state, the limits have been maintained based on anti-backsliding regulations (see non-numbered page 7 of the fact sheet 2005 fact sheet). The rationale supporting the basis for best professional judgment and meeting anti-degradation and anti-backsliding requirements are detailed in Response to Comment A5.

EPA further notes that no significant, continuous source of solids in the enclosed, paved tank farm area which contributes to Outfall 003 is apparent. For comparison, bulk petroleum storage facilities permitted by EPA Region 1, which similarly store petroleum products and largely apply the same treatment (i.e., stormwater pollution prevention plan and oil/water separation) achieve effluent limitations of 15 mg/L for monthly average TSS and 30 mg/L for daily maximum TSS for largely pervious drainage areas. In other words, where sediment load is expected to be significantly higher where stormwater comes into direct contact with exposed sediment, the effluent limitations achieved by identical treatment technology, sized appropriately for the stormwater runoff volumes generated, are within the same order of magnitude as those imposed upon this facility. The Permittee is similarly expected to achieve solids reduction through implementation of its Stormwater Pollution Prevention Plan. Furthermore, the effluent quality currently achieved by the facility using existing treatment generally meets the existing limitations. Since January 1, 2012, the facility has exceeded the daily maximum limit on only one occasion and has not exceeded the monthly average limit.

Therefore, the TSS limits at Outfall 003 for stormwater associated with industrial activity have not been changed, as requested, to be equal to the TSS limits at Outfall 001 for contact process water from operations within the asphalt roofing industrial category (SIC code 2952).

Comment A9:

Part I.A.4, Table 4 requires composite samples for Total Suspended Solids and Phosphorus. We request that all sampling requirements for this outfall be changed to grab samples “when a discharge occurs.” This outfall is a manually initiated discharge.

Response to Comment A9:

See Response to Comment A6, as the comment is substantially identical.

Comment A10:

Part I.A.4, Table 4 requires that flow rate be measured with a meter. The pump for this outfall is designed for a maximum flow rate of 100 gpm. We request that the requirement to add a meter to this outfall be removed.

Response to Comment A10:

See Response to Comment A7, as the comment is substantially identical.

Comment A11:

Part I.A.4, Table 4 shows the maximum daily flow rate as 20 gpm. We believe this is a typographical error and should be changed to 100 gpm as the pump and oil/water separator are designed for a maximum flow rate of 100 gpm and Section 7.3.1 of the Fact Sheet correctly states the treatment capacity of the oil/water separator for Outfall 004 as 100 gpm. We request that the flow rate requirement be changed to 100 gpm.

Response to Comment A11:

EPA agrees that the daily maximum flow rate limit of 20 gallons per minute ("gpm") for Outfall 004 is a typographical error. EPA has changed the final permit to reflect a daily maximum flow rate limit of 100 gpm for Outfall 004.

Comment A12:

The draft NPDES permit contains a maximum daily limit of 20 mg/L for TSS at Outfall 004. However, Outfall 001 has a maximum daily limit of 70 mg/L. We find no design data or historical record that supports these lower limits. We believe the original limits to have been established in error. Further the derived BPT and BAT for Outfall 001 support a higher TSS limit. We request the TSS limit for Outfall 001 be changed to be equal to Outfall 001.

Response to Comment A12:

EPA believes the commenter has requested to change the TSS limit for *Outfall 004* to be equal to Outfall 001. The maximum daily limit of *15 mg/L* for total suspended solids at Outfall 004 remains unchanged. Since January 1, 2012, the facility has exceeded the daily maximum limit on only two occasions and the monthly average limit on one occasion. Otherwise, see Response to Comment A8, as the comment and rationale applicable to EPA's response for Outfall 004 TSS limitations are substantially identical to that of Outfall 003.

Comment A13:

There are discrepancies between the sampling requirements in the tables and in the footnotes. Footnote #17 includes WET test sampling requirement for antimony, iron, manganese, chromium, calcium, magnesium and phosphorus. These sampling requirements are no included in Tables 1 and 2 in Part I A of the draft permit. Additionally, aluminum sampling is listed in tables 1 and 2 in Part I A, but is not listed in footnotes #16 or #17. Please provide clarification on these sampling requirements.

Response to Comment A13:

Antimony, iron, manganese, chromium, calcium, magnesium and phosphorus were listed in the tables in Part I.A.1. and I.A.2. following the parameters listed under WHOLE EFFLUENT TOXICITY TEST, RECEIVING WATER CHEMICAL ANALYSIS, page 3 of 20 and 5 of 20, respectively. The sampling of these parameters is required *in conjunction with* WET testing and was therefore listed separately from the parameters *required for* WET testing as listed in *Attachment A: Freshwater Acute Toxicity Test Procedure and Protocol (2011)*. However, because sampling for these parameters is required of both the 100% effluent and receiving water control collected for WET testing, EPA has incorporated antimony, iron, manganese, chromium, calcium, magnesium and phosphorus into the list of parameters under WHOLE EFFLUENT TOXICITY and WHOLE EFFLUENT TOXICITY TEST, RECEIVING WATER CHEMICAL ANALYSIS in Parts I.A.1. and I.A.2. to improve clarity. Part I.A. footnote 17 has been incorporated into Part I.A. footnote 16 as a result.

EPA apologizes for the omission of total recoverable aluminum from the list of parameters specified in Part I.A. footnote 16. However, the minimum level for analysis was specified in Part I.A. footnote 8. EPA has added total recoverable aluminum to Part I.A. footnote 16 for consistency. Part I.A. footnote 8 remains unchanged.