

**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. c. 21, §§26-53),

Quabbin Wire & Cable Company, Inc.

is authorized to discharge from a facility located at

**10 Maple Street
Ware, Massachusetts 01082**

to receiving water named

**Ware River (Segment MA36-06)
Chicopee River Watershed (Hydrologic Unit Code 01080204)**

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

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

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

This permit supersedes the permit issued on May 1, 2007.

This permit consists of 10 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 including General Conditions and Definitions.

Signed this day of

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

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge contact cooling water through Outfall Serial Number 003 to the Ware River. The discharge shall be limited and monitored by the Permittee as specified below:

PARAMETER	Discharge Limitation		Monitoring Requirements ^{1,2}	
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
FLOW ³	0.01 MGD	0.025 MGD	Continuous	Meter
pH RANGE ^{4,5}	6.5 ≤ pH ≤ 8.3 Standard Units at any time		Monthly	Grab
TEMPERATURE	-----	83° F	Monthly	Grab
BIOCHEMICAL OXYGEN DEMAND (BOD ₅)	-----	26 mg/L	Quarterly	Composite
TOTAL SUSPENDED SOLIDS	-----	19 mg/L	Quarterly	Composite
OIL AND GREASE	-----	15 mg/L	Quarterly	Grab
TOTAL COPPER	-----	Report mg/L	Quarterly	Composite
TOTAL ZINC	-----	Report mg/L	Quarterly	Composite
BIS (2-ETHYLHEXYL) PHTHALATE	-----	Non-Detect	1/Year	Grab
TOTAL RESIDUAL CHLORINE ⁶	-----	Report mg/L	Monthly	Grab
WHOLE EFFLUENT TOXICITY ^{7,8,9}				
LC ₅₀	-----	Report %	2/Year	Composite
Hardness	-----	Report mg/L	2/Year	Composite
Total Residual Chlorine	-----	Report mg/L	2/Year	Composite
Alkalinity	-----	Report mg/L	2/Year	Composite
pH	-----	Report mg/L	2/Year	Composite
Specific Conductance	-----	Report mg/L	2/Year	Composite
Total Solids	-----	Report mg/L	2/Year	Composite

Total Dissolved Solids	-----	Report mg/L	2/Year	Composite
Ammonia	-----	Report mg/L	2/Year	Composite
Total Organic Carbon	-----	Report mg/L	2/Year	Composite
Total Cadmium	-----	Report mg/L	2/Year	Composite
Total Lead	-----	Report mg/L	2/Year	Composite
Total Copper ¹⁰	-----	Report mg/L	2/Year	Composite
Total Zinc ¹⁰	-----	Report mg/L	2/Year	Composite
Total Nickel	-----	Report mg/L	2/Year	Composite
Total Aluminum	-----	Report mg/L	2/Year	Composite
Total Calcium	-----	Report mg/L	2/Year	Composite
Total Magnesium	-----	Report mg/L	2/Year	Composite
DILUENT WHOLE EFFLUENT TOXICITY¹¹				
Hardness	-----	Report mg/L	2/Year	Grab
Alkalinity	-----	Report mg/L	2/Year	Grab
pH	-----	Report mg/L	2/Year	Grab
Specific Conductance	-----	Report mg/L	2/Year	Grab
Ammonia	-----	Report mg/L	2/Year	Grab
Total Organic Carbon	-----	Report mg/L	2/Year	Grab
Total Cadmium	-----	Report mg/L	2/Year	Grab
Total Lead	-----	Report mg/L	2/Year	Grab
Total Copper	-----	Report mg/L	2/Year	Grab
Total Zinc	-----	Report mg/L	2/Year	Grab
Total Nickel	-----	Report mg/L	2/Year	Grab
Total Aluminum	-----	Report mg/L	2/Year	Grab

The effluent samples for Outfall 003 shall be collected at the discharge point to the Ware River. Any changes in sampling location must be approved in writing by EPA and MassDEP. All samples shall be tested in accordance with the procedures in 40 Code of Federal Regulations (CFR) §136, unless specified elsewhere in the permit.

Footnotes:

¹ The composite samples shall consist of at least 8 grab samples collected at equal intervals during a normal eight-hour workday and during the time at which the discharge is entering the receiving water. The timing of grab samples for pH shall correspond with the timing of composite sampling for the other parameters.

² Sampling frequency of quarterly is defined as the interval of time between the months of January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. The Permittee shall submit the results to EPA and MassDEP of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41 (l)(4)(ii).4.

³ The Permittee shall report the average monthly and maximum daily flow in million gallons per day (MGD) for each sampling period. The flow measurements are based on the daily intake rate of the municipal water supply.

⁴ Requirement for State Certification.

⁵ 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.

⁶ The minimum level (ML) for Total Residual Chlorine (TRC) is defined as 20 µg/l using EPA approved methods found in 40 CFR Part 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. 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.

⁷ All WET test data shall be reported in Discharge Monitoring Reports (DMRs) submitted to EPA and MassDEP. 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. 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.

⁸ The LC50 (Lethal Concentration 50 percent) is the concentration of wastewater (cooling water discharges) causing mortality to 50 percent (%) of the test organisms.

⁹ The Permittee shall conduct acute toxicity 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 during June and September. 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. If no toxicity is indicated after two tests, the Permittee may request a reduction in testing frequency which will not be less than once per year.

¹⁰ Copper and zinc analyses conducted for the wet chemistry portion of the WET test may also be submitted to satisfy the quarterly sampling requirements for those parameters.

¹¹ The dilution water sample for the WET test shall be collected from the Ware River at a point immediately upstream of Outfall 003'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 to this guidance will be transmitted to the permittees. However, at any time, the Permittee may choose to contact EPA-NewEngland directly using the approach outlined in Attachment A. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must be tested.

PART I.A. (continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - b. 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.
 - c. The effluent shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall contain neither a visible oil sheen, foam, nor floating or settleable solids at any time.
 - e. The effluent shall not contain materials in concentrations or in combinations which would impair the uses designated by the classification of the receiving water.
 - f. 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.
 - g. The results of sampling for any parameter above its required frequency must also be reported.
2. 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. One hundred micrograms per liter (100 ug/l);
 - ii. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - iii. 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. Five hundred micrograms per liter (500 µg/l);
 - ii. One milligram per liter (1 mg/l) for antimony;
 - iii. Ten (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.
3. Numerical Effluent Limitations for Toxicants
- a. U.S. Environmental Protection Agency (EPA) or the Massachusetts Department of Environmental Protection (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 Part 122.

4. The Permittee shall not use or manufacture as an intermediate or final product or byproduct any toxic pollutant 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.
5. The Permittee shall not add chemicals (i.e. disinfectant agents, detergents, emulsifiers, etc.), bioremedial agents, including microbes, to the cooling water without prior approval from EPA and MassDEP. The Permittee shall notify EPA and MassDEP at the addresses in Part I.D. when it proposes to add or replace any chemicals, bio-remedial agents, including microbes, to the cooling water.
6. Toxics Control
 - a. The Permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
 - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

B. UNAUTHORIZED DISCHARGES

This permit authorizes the Permittee to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in Part I.A.1 of this permit. Discharges of wastewater from any other point sources which are not authorized by this permit or other NPDES permits shall be reported in accordance with Section D.1.e.(1) of the Standard Conditions of this permit (twenty-four hour reporting).

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. MONITORING AND REPORTING

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

- a. Submittal of Reports Using NetDMR

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

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

- b. Submittal of NetDMR Opt-Out Requests

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

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-1)
Boston, MA 02109-3912

and

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

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Forms (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. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

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

Duplicate signed copies of **DMRs, and all reports or notifications** required above shall be submitted to the State at the following address:

MassDEP – Western Region
Bureau of Waste Prevention
436 Dwight Street, Suite 402
Springfield, MA 01103

And, **without DMRs**, to the State at the following address:

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

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

E. 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/swguidance/methods/wet/index.cfm#methods>

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°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/enforcementandassistance/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 TESTS¹

1.	Test type	Static, non-renewal
2.	Temperature (°C)	20 ± 1° C or 25 ± 1° 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 <u>Selenastrum</u> 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 ³	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 TEST¹**

1. Test Type	Static, non-renewal
2. Temperature (°C):	20 ± 1 ° C or 25 ± 1°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 the others
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	≥ 0.5, must bracket the permitted RWC

15. Number of dilutions ³	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.

<u>Parameter</u>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
Hardness ¹ ,	x	x	0.5
Total Residual Chlorine (TRC) ^{2, 3} ,	x		0.02
Alkalinity	x	x	2.0
pH ⁴	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)

TABLE OF CONTENTS

A. GENERAL CONDITIONS	Page
1. <u>Duty to Comply</u>	2
2. <u>Permit Actions</u>	2
3. <u>Duty to Provide Information</u>	2
4. <u>Reopener Clause</u>	3
5. <u>Oil and Hazardous Substance Liability</u>	3
6. <u>Property Rights</u>	3
7. <u>Confidentiality of Information</u>	3
8. <u>Duty to Reapply</u>	4
9. <u>State Authorities</u>	4
10. <u>Other laws</u>	4
B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS	
1. <u>Proper Operation and Maintenance</u>	4
2. <u>Need to Halt or Reduce Not a Defense</u>	4
3. <u>Duty to Mitigate</u>	4
4. <u>Bypass</u>	4
5. <u>Upset</u>	5
C. MONITORING AND RECORDS	
1. <u>Monitoring and Records</u>	6
2. <u>Inspection and Entry</u>	7
D. REPORTING REQUIREMENTS	
1. <u>Reporting Requirements</u>	7
a. Planned changes	7
b. Anticipated noncompliance	7
c. Transfers	7
d. Monitoring reports	8
e. Twenty-four hour reporting	8
f. Compliance schedules	9
g. Other noncompliance	9
h. Other information	9
2. <u>Signatory Requirement</u>	9
3. <u>Availability of Reports</u>	9
E. DEFINITIONS AND ABBREVIATIONS	
1. <u>Definitions for Individual NPDES Permits including Storm Water Requirements</u>	9
2. <u>Definitions for NPDES Permit Sludge Use and Disposal Requirements</u>	17
3. <u>Commonly Used Abbreviations</u>	23

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

- (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

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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

NPDES PART II STANDARD CONDITIONS

(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

- 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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

- (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

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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

NPDES PART II STANDARD CONDITIONS

(January, 2007)

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).

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS

(January, 2007)

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,

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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 of 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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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.)

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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 I
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: MA0030571

PUBLIC NOTICE START AND END DATES: August 28, 2012 thru September 26, 2012

NAME AND MAILING ADDRESS OF APPLICANT:

Quabbin Wire & Cable Company, Inc.
10 Maple Street
Ware, MA 01082

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Quabbin Wire & Cable Company, Inc.
10 Maple Street
Ware, MA 01082

RECEIVING WATER: Ware River (MA36-06)

RECEIVING WATER CLASSIFICATION: B

SIC CODES: 3357

Table of Contents

1.0	Proposed Action, Type of Facility, and Discharge Location.....	4
1.1	Proposed Action	4
1.2	Type of Facility	4
1.3	Discharge Location	4
2.0	Description of Discharge	4
3.0	Receiving Water Description.....	4
4.0	Permit Limitations and Conditions	5
5.0	Permit Basis: Statutory and Regulatory Authority	6
5.1	General Requirements	6
5.2	Technology-Based Requirements	6
5.3	Water Quality-Based Requirements.....	6
5.4	Anti-Backsliding	7
5.5	Anti-Degradation.....	7
6.0	Explanation of the Permit’s Effluent Limitations.....	8
6.1	Facility Information.....	8
6.2	Permitted Outfall and Dilution Factor.....	9
7.0	Derivation of Effluent Limits under the Federal CWA and the Commonwealth of Massachusetts’ Water Quality Standards.....	10
7.1	Flow.....	10
7.2	pH.....	10
7.3	Temperature	10
7.4	Biochemical Oxygen Demand (BOD ₅)	11
7.5	Total Suspended Solids (TSS).....	11
7.6	Oil and Grease (O&G)	12
7.7	Metals.....	12
7.8	Total Residual Chlorine (TRC).....	16
7.9	Bis (2-ethylhexyl) phthalate (DEHP).....	16
7.10	Whole Effluent Toxicity Testing (LC-50)	17
8.0	Essential Fish Habitat (EFH)	17
9.0	Endangered Species Act (ESA).....	18

10.0	Monitoring	20
11.0	State Certification Requirements	21
12.0	Comment Period, Hearing Requests, and Procedures for Final Decisions	21
13.0	EPA and MassDEP Contacts	22

Attachments:

- Attachment 1: Quabbin Wire and Cable Company, Inc. Location Map
- Attachment 2: Quabbin Wire and Cable Company, Inc. Site Plan
- Attachment 3: Available Discharge Monitoring Data
- Attachment 4: Quabbin Wire and Cable Company, Inc. Process Flow Diagram
- Attachment 5: Calculation of Estimated 7Q10 and Dilution Factor for Outfall 003
- Attachment 6: Reasonable Potential Analysis for Outfall 003 Metals

1.0 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 re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge their contact cooling water into the designated receiving water. The current permit (“2007 permit”), issued on February 22, 2007, became effective on May 1, 2007, and expired April 30, 2012. EPA received a completed permit renewal application from the facility dated August 22, 2011. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued pursuant to 40 CFR § 122.6.

1.2 Type of Facility

The Quabbin Wire and Cable Company, Inc. facility (“The Facility”) in Ware is engaged in the manufacture and distribution of thermoplastic shielded and unshielded cables for the global technology market. The Facility location map is shown in Attachment 1. Raw materials brought into the site include plain and tin-coated copper wire, polyvinyl chloride (PVC), high density polyethylene (HDPE) and low density polyethylene (LDPE) plastic pellets, dyes, and inks, and polyethylene terephthalate (PET), aluminum and copper braids for woven sheathing.

1.3 Discharge Location

The Facility is located in a former textile mill between the Ware River and Maple Street in downtown Ware, Massachusetts (see Attachment 1). The manufacturing and distribution buildings form the south bank of the Ware River. A hydroelectric power plant abuts the river on the north bank. The Facility is located downstream of the Lower Canal Dam and upstream of the confluence with Muddy Brook. Outfall 003 is located at Latitude 42° 15’ 29” Longitude 72° 14’ 22.” Attachment 2 shows the site plan for the Facility, and the location of Outfall 003.

2.0 Description of Discharge

The 2007 permit authorized the discharge of contact cooling water from Outfall 003. The receiving water is the Ware River, which flows from east to west on the northern edge of manufacturing building. The discharge is contact cooling water which overflows from a cooling water system used to cool plastic coated wire and wire bundles after extrusion. Discharge monitoring data from May 1, 2007 through April 30, 2012 for Outfall 003 is included in Attachment 3.

This permit does not address storm water discharges from this site authorized under the Storm Water Multi-Sector General Permit for Industrial Activities (MSGP) with tracking number MAR05CT21.

3.0 Receiving Water Description

The Facility discharges through Outfall 003 to the Ware River (Segment MA36-06). This segment is 10.1 miles in length from the Ware Dam, in Ware to the Thorndike Dam, in Palmer. The Facility is approximately one mile downstream of the Ware Dam and just below the smaller Lower Canal Dam, part of the Ware River Hydroelectric Project. MassDEP classifies this segment of the Ware River as

Class B (warm water fishery)¹ and CSO. 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 Ware River is a tributary to the Chicopee River. The Ware River is also part of the Massachusetts Water Resources Authority drinking water system for the Boston area.

The Ware River segment MA36-06 is listed as a Category 5 “Waters Requiring a TMDL” on the Final Massachusetts Year 2010 Integrated List of Waters (CWA Sections 303d and 305b)². The pollutant requiring a TMDL is fecal coliform. The status of each designated use described in the Chicopee River Basin 2003 Water Quality Assessment Report³ is presented in Table 1.

Table 1: Summary of Designated Uses for Ware River Segment MA36-06

Designated Use	Status
Aquatic Life	Support on Alert Status
Aesthetics	Support
Primary Contact Recreation	Not Assessed
Secondary Contact Recreation	Not Assessed
Fish Consumption	Not Assessed

The Aquatic Life use is supported in this segment based on the presence of fish and wildlife protection and propagation. This use is on “Alert Status” because of Whole Effluent Toxicity from the Ware Wastewater Treatment Plant discharge, located approximately one mile downstream of the Facility. Benthic macroinvertebrate surveys conducted by MassDEP in 1998 indicated that in the vicinity of the Facility, the benthic community was non-impaired. The Aesthetics use is supported in this segment based on the overall lack of objectionable conditions. The Aquatic Life use is given an “Alert Status” due to the acute and chronic whole effluent toxicity from the Ware Wastewater Treatment Plant (WWTP) discharge, located approximately one mile downstream of the Facility. The Primary Contact Recreation, Secondary Contact Recreation, and Fish Consumption uses have not been assessed.

4.0 Permit Limitations and Conditions

The effluent limitations, and all other requirements may be found in the Draft Permit. The basis for the limits and other permit requirements are described below.

¹ <http://www.mass.gov/dep/water/laws/tblfig.pdf>

² Massachusetts Year 2010 Integrated List of Waters. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; November 2011.

³ Chicopee River Watershed 2003 Water Quality Assessment Report. MassDEP Division of Watershed Management, Worcester, Massachusetts; October 2008, Report Number: 36-AC-3.

5.0 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 NPDES Draft 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 § 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 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 achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must be 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)). A NPDES permit cannot authorize compliance schedules and deadlines which are not in accordance with the statutory provisions of the CWA.

EPA has promulgated technology-based National Effluent Limitations Guidelines (ELGs) for BPT in 40 CFR § 463.12 and for BAT in 40 CFR § 463.13 for contact cooling water in the Plastics Molding and Forming Point Source Category.

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 (WQSs), 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

Anti-backsliding as defined in 40 CFR §122.44(l)(1) requires reissued permits to contain limitations as stringent as or more stringent than those of an permit, unless the circumstances allow application of one of the defined exceptions to this regulation. Anti-backsliding applies to limits contained in the existing permit and, therefore, these limits are continued in the draft permit. However, this Draft Permit contains less stringent limitations or conditions 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)].

According to Section 122.44(l)(2)(i) of the CWA, a permit limit may not be less stringent unless one or more of the anti-backsliding exceptions is met: (1) material and substantial alterations or additions occurred since the time the permit was issued; and (2) information is available which was not available at the time of permit issuance. Such changes would constitute a cause for permit modification or revocation and reissuance under 40 CFR §122.62. The Draft Permit includes less stringent limitations or conditions for average monthly and maximum daily flow. See Section 7.1 for a description.

5.5 Anti-Degradation

Federal regulations found at 40 CFR § 131.12 require that all existing uses in the receiving water, along with the level of water quality necessary to protect those existing uses, are maintained and protected. The Commonwealth of Massachusetts' anti-degradation provisions found in 314 CMR 4.04 ensure that provisions in 40 CFR Section 131.12 are met. The effluent limits in the draft permit should ensure that provisions in 314 CMR 4.04 are met. In accordance with Section 301(b)(1)(C) of

the CWA, EPA is required to obtain certification from the state in which the discharge is located that WQSs or other applicable requirements of state law are met.

6.0 Explanation of the Permit's Effluent Limitations

6.1 Facility Information

The Facility is located on an industrial site, in a former 19th century textile mill. Quabbin Wire and Cable Company, Inc. has been manufacturing and distributing plastic coated wire and cable at the Facility since 1975.

The Facility manufactures a variety of shielded and unshielded cables for computer, data transmission, instrumentation, and other electronic applications. The Facility produces electrical wire by insulating non-ferrous wire through extrusion of plastic in a mass melt process. Plastic coatings may be applied to a single wire or over a bundle of copper wires that have been previously coated with color-coded plastic at the Facility. Additional shields such as PET, Aluminum and Copper Braids are also applied. The Facility buys copper wire of various gauges and extrudes a plastic coating onto them made of Polyvinyl chloride (PVC), high-density polyethylene (HDPE) and low-density polyethylene (LDPE). The plastic coating material is delivered in large boxes of plastic pellets. Pellets are generally white upon delivery but water insoluble color concentrate can be added to the extrusion hopper for coloring. Copper wire is either bare or pre-coated with tin. The coating materials include metal stabilizer additives.

Plastic pellets are fed into a hopper above a spiral extruder where, under high pressure and heat, the plastic tube is formed around the wire cable. Immediately following formation, the wire-coated cable passes through a long re-circulating cooling bath until the plastic has cured enough to maintain its shape for marking and coiling. After the cooling bath, the cable is dried, stamped with identifying information and coiled on large spools. The Facility uses approximately eight extrusion machines, rarely all at once. The coated wire travels through cooling water troughs in each production line that immerse or spray the coated wire, gradually lowering its temperature.

The 2007 Permit noted that the Facility uses water provided by two on-site artesian water supply wells in their cooling baths. On April 26, 2007, the facility formally requested the option to use municipal water supply in their cooling water system because of iron bacteria buildup in one of the artesian water supply wells. EPA confirmed this option on May 30, 2007. The use of municipal water began August 1, 2007. The water enters the cooling bath system through the three large cooling water tanks located on the ground floor of the manufacturing building. Table 2 presents the maximum capacity of each of the holding tanks.

Table 2: Summary of Cooling Water Tank Capacities

Tank Name	Capacity	Purpose
Q-1 Tank	250 gallons	Discharge tank
DataMax Tank	450 gallons	Holding tank
DataMax Cooling Tank	200 gallons	Cooling water reservoir

The Facility re-circulates the cooling water in the cooling water system. Water is pumped from the three large tanks described above to 11 small holding tanks and 21 cooling trays in the Facility. The Facility only adds additional water when the temperature of the cooling water in the holding tanks rises to 82°F. Discharge to the Ware River occurs when the discharge tank overflows onto the floor in the small room in which it sits. The water flows to a floor drain approximately 15 feet from the discharge tank and out the side of the building into the Ware River. The room entrance is elevated above the floor by approximately seven inches, providing some capacity for flood control and spill protection for the outfall.

Water supplementation is not constant, and depends on the size and number of extrusion machines in use at any one time. The Facility does not add chemicals to the water but because the Facility uses municipal water, residual chlorine may be present. A filter sock attached to the return line from the cooling trays collects iron accumulation. Occasionally, the Facility drains the tanks one at a time for cleaning. Iron buildup from the sides and bottom of the holding tanks is disposed of as a solid waste.

Because the Facility manufactures wire and cable for distribution around the world, their products must meet hazardous substance standards including the RoHS Directive set by the European Union (EU). The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment." This Directive bans the placing of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants on the EU market. As a result, the Facility has eliminated or significantly reduced the content of metals such as lead and chromium in process materials.

6.2 Permitted Outfall and Dilution Factor

The Facility discharges contact cooling water via Outfall 003 to the Ware River. As described above, the Ware River is a Class B freshwater waterbody and a Category 5 "Water requiring a TMDL" for fecal coliform.

Attachment 4 includes a flow diagram of the processes contributing to Outfall 003. Cooling water from the municipal water supply system enters the Facility at a maximum flow rate of approximately 50 gallons per minute. Flow meters connected in line with the system regulate the pumping rate for the water supply. The process controls are set to keep the discharge temperature under 82° F.

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 lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or 7-day 10-year low flow (7Q10) (see Attachment 5).

EPA calculated the 7Q10 for the Ware River 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 Ware River (station number 01173500 at Gibbs Crossing⁴). EPA determined the estimated drainage

⁴ USGS StreamStats National Data Collection Station Report for Station 01173500:
<http://streamstatsags.cr.usgs.gov/gagepages/html/01173500.htm>

area for the Facility using the USGS StreamStats for Massachusetts watershed delineation tool.⁵ Since the maximum flow recorded at the Facility over the last five years is less than the permitted daily maximum in the Draft Permit, EPA used the permitted daily maximum value to calculate available effluent dilution. The calculated dilution factor for the Facility is 478:1.

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

7.1 Flow

From May 1, 2007 through April 30, 2012, the maximum flow reported was 0.0208 MGD and the minimum flow reported was 0.0018 MGD.

As described above, the Facility no longer uses two on-site artesian wells for its water supply. The municipal water system serves as the water supply for the contact cooling water. The draft of the 2007 Permit contained a flow limit of 0.025 MGD, which is the current design flow of the cooling water system. However, EPA lowered this limit to 0.020 MGD based on a response to comment regarding the safe yield of the artesian wells used at the Facility at the time and maximum recorded flows for the previous permit cycle.

EPA has determined that the circumstances upon which the previous permit was based have materially and substantially changed since the Facility has replaced the artesian well water supply with municipal water supply. As a result, the limiting factor for flow under current operating conditions at the Facility is the design flow of the cooling water system, 0.025 MGD. Therefore, the Draft Permit contains a maximum daily flow limit of 0.025 MGD and a monthly average flow limit of 0.01 MGD. EPA does not expect this change will violate applicable effluent limitations guidelines (ELGs) or Massachusetts WQSs. This determination is also in compliance with Section 122.44(l)(2)(i) of the CWA. If subsequent monitoring at the Facility demonstrates conditions are significantly different from those used in EPA's determination, the Draft Permit may be modified pursuant to 40 CFR §122.62.

7.2 pH

From May 1, 2007 through April 30, 2012, pH levels have ranged from 7.5 SU to 8.16 SU. Effluent limit guidelines for contact cooling water from plastics molding and forming point sources (40 CFR 463.12) require effluent pH to be between 6.0 and 9.0 SU at all times. However, the Massachusetts Surface WQSs, 314 CMR 4.00, 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, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs.

7.3 Temperature

As described above, cooling water re-circulates through the large holding tanks, small holding tanks, and cooling trays in the Facility. Thermocouples inside the holding tanks monitor the temperature of

⁵ USGS StreamStats for Massachusetts Interactive Map: <http://water.usgs.gov/osw/streamstats/massachusetts.html>

the re-circulating water. If the temperature of the water in the holding tanks rises to 82° F, the Facility adds supplemental municipal water to cool the water in the holding tanks. The resulting overflow from the holding tanks discharges to the Ware River through Outfall 003. The thermocouple attached to the discharge tank measures the actual discharge temperature.

The Massachusetts WQSs for class B waters (314 CMR 4.05(3)(b)) pertaining to temperature in warm water fisheries states that

- 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.”*

From May 1, 2007 through April 30, 2012, the temperature of the effluent has averaged 80° F and ranged from 79 to 82° F. Upstream and downstream monitoring conducted between 2001 and 2006 has indicated 1° F or less temperature difference at locations upstream and downstream of Outfall 003. As a result, the requirement for monitoring and reporting upstream and downstream temperature was not included in the 2007 permit. Further, EPA has determined that the current discharge flows and temperature are consistent with those used in the determination that a temperature impact on the Ware River close to 5° F does not occur. The Draft Permit maintains a daily maximum temperature limit of 82°F, and requires reporting the average monthly temperature. EPA considers temperature monitoring requirements sufficiently stringent to achieve Massachusetts WQSs.

7.4 Biochemical Oxygen Demand (BOD₅)

An excess of oxygen demanding substances (measured as BOD₅) can cause depletion of the in-stream dissolved oxygen levels thereby causing harm to aquatic life. The effluent limit guidelines established for Plastics Molding and Forming Point Source Category (40 CFR §463.12) include a maximum daily limit of 26 mg/L for BOD₅. From May 1, 2007 through April 30, 2012, BOD₅ levels have ranged from below the laboratory Practical Quantitation Limits (PQLs) to 18 mg/L. The Draft Permit maintains a maximum daily limit of 26 mg/L, consistent with this technology-based limit, monitored quarterly.

7.5 Total Suspended Solids (TSS)

TSS discharged to receiving water may contribute to turbidity, oxygen depletion, or loading of nutrients and other pollutants. The effluent limit guidelines established for Plastics Molding and Forming Point Source Category (40 CFR §463.12) include a maximum daily limit of 19 mg/L for TSS. From May 1, 2007 through April 30, 2012, TSS has not been detected above laboratory PQLs. The Draft Permit maintains a maximum daily limit of 19 mg/L, consistent with this technology-based limit, monitored quarterly.

7.6 Oil and Grease (O&G)

The effluent limit guidelines established for Plastics Molding and Forming Point Source Category (40 CFR §463.12) include a maximum daily limit for O&G of 29 mg/L. However, the 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 May 1, 2007 through April 30, 2012, O & G levels have ranged from below the laboratory PQLs to 1.4 mg/L. The Draft Permit maintains a maximum daily limit for oil and grease of 15 mg/L, monitored quarterly, to ensure compliance with Massachusetts WQSs.

7.7 Metals

Many types of metals occur in ground and surface waters around New England. Certain metals like copper, lead, and zinc can be toxic to aquatic life, as well as contaminating other plant and animal species. Sources of metals in the contact cooling water discharge include process materials, the municipal water supply, and process piping. The Facility uses copper wire and tin-coated copper wire. The metal stabilizers and PVC used in the plastic coating process at the Facility include zinc, and antimony. In addition, the contact cooling water passes through copper pipes and steel troughs prior to discharge.

There are no technology based effluent limit guidelines for metals in contact cooling water in the Plastics Molding and Forming Point Source Category (40 CFR 463). The Commonwealth of Massachusetts requires 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)).

The 2007 Permit requires monitoring of copper, lead, zinc, and antimony on a quarterly basis. In addition, the Whole Effluent Toxicity (WET) test includes metals analysis for cadmium, chromium, nickel, aluminum, magnesium and calcium. A summary of metals monitoring completed at the Facility between 2007 and 2012 is compared to applicable criteria in Table 3 and 4 below. Median ambient metals concentrations for the Ware River are also included, if available. Data shown are the median values determined in the chemical analysis portion of WET tests conducted at the Ware WWTP between 2009 and 2012 (NPDES Permit No. MA0100889).

Table 3: Quarterly Metals Monitoring Data

Parameter	Effluent Metals Concentration 2007 through 2012 (mg/L)		Ware River Metals Concentration (mg/L)	Freshwater Water Quality Criteria (mg/L)		Human Health Criteria (mg/L)
	Average	Maximum	Median	<i>Acute</i>	<i>Chronic</i>	Organism Only
Copper	0.0584	0.137	0.0015	.00308	.00236	---

Lead	Not Detected	Not Detected	0.0	0.0105	0.00041	---
Zinc	0.03	0.0564	0.0135	.030	.030	26.0
Antimony	0.0008	0.008	---	---	---	0.640

Table 4: WET Test Metals Monitoring Data

Parameter	Effluent Metals Concentration 2007 through 2012 (mg/L)		Ware River Metals Concentration (mg/L)	Freshwater Water Quality Criteria (mg/L)		Human Health Criteria (mg/L)
	Average	Maximum	Median	Acute	Chronic	Organism Only
Aluminum	0.029	0.065	0.086	0.750	0.087	---
Cadmium	Not Detected	Not Detected	Not Detected	0.0004	0.00008	---
Chromium	Not Detected	Not Detected	0.0	0.48	0.023	---
Nickel	Not Detected	Not Detected	0.0	0.12	0.013	4.6

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 background concentrations of metals when evaluating effluent limitations. Since ambient concentration data for the receiving water immediately upstream of the discharge was not available, EPA used the best available data from the Ware WWTP WET test for 2009 through 2012 (NPDES Permit No. MA0100889). Since these data were collected from a location immediately downstream of the Facility, EPA used these data to be conservative. EPA considered the median concentration most representative for the receiving water in the vicinity of the Facility's discharge for the following reasons:

- The sample location nearest the Facility is downstream (approximately one mile to the Ware WWTP) rather than upstream (approximately five miles to the Hardwick-Gilbertville WPCF – NPDES Permit No. MA0100102);
- The concentrations of metals were generally higher in the nearest downstream rather than upstream sample location;
- The receiving water is sampled more frequently at the nearest downstream rather than upstream sample location;
- The downstream sample location is situated in the same segment of the Ware River as the Facility; the upstream sample location is situated in segment MA36-05;
- There are no impoundments between the downstream sample location and the Facility; there are multiple impoundments between the upstream sample location and the Facility;
- The downstream concentrations are conservative as these data potentially indicate the effluent effect of the discharge from the Facility.

The reasonable potential analysis for metals is included in Attachment 6 and summarized below.

Copper

From May 1, 2007 through April 30, 2012, copper levels have ranged from 0.0258 mg/L to 0.137 mg/L. EPA determined that there is no reasonable potential for the Facility's discharges of copper to cause or contribute to concentrations that exceed WQC. However, because concentrations of copper are above the acute and chronic exposure limits for freshwater organisms in the effluent discharge, the Draft Permit maintains quarterly monitoring requirements for copper. In addition, copper monitoring will continue twice per year in conjunction with WET testing. Because the Facility's upstream ambient copper concentration was unavailable for EPA's analysis, if subsequent WET testing at the Facility demonstrates ambient conditions are significantly different from those used in EPA's analysis, the Draft Permit may be modified pursuant to 40 CFR §122.62.

Zinc

From May 1, 2007 through April 30, 2012, zinc levels have ranged from 0.013 mg/L to 0.0564 mg/L. EPA has determined that there is no reasonable potential for the Facility's discharges of zinc to cause or contribute to concentrations that exceed WQC. However, because concentrations of zinc are occasionally above the acute and chronic exposure limits for freshwater organisms in the effluent discharge, the Draft Permit maintains quarterly monitoring requirements for zinc. In addition, zinc monitoring will continue twice per year in conjunction with WET testing. Because the Facility's upstream ambient zinc concentration was unavailable for EPA's analysis, if subsequent WET testing at the Facility demonstrates ambient conditions are significantly different from those used in EPA's analysis, the Draft Permit may be modified pursuant to 40 CFR §122.62.

Antimony

There are currently no fresh water chronic or acute WQC for antimony. The EPA "organism only" human health WQC for antimony is 0.640 mg/L. From May 1, 2007 through April 30, 2012, antimony was detected in two of 19 effluent samples at a maximum concentration of 0.008 mg/L. Given the available dilution in the Ware River, there is no reasonable potential for concentrations of antimony in the Facility's discharge to exceed 0.640 mg/L. Therefore, the Draft Permit does not maintain monitoring requirements for antimony.

Aluminum

The Massachusetts WQS for aluminum sets the WQC as the allowable receiving water concentration (see 314 CMR 4.05(5)(e)). The acute and chronic WQC are 750 µg/L (0.750 mg/L) and 87 µg/L (0.087 mg/L), respectively. From May 1, 2007 through April 30, 2012, the discharge from the Facility contained less aluminum than the acute and chronic criteria. For this reason, there is no reasonable potential for the Facility's discharges of aluminum to cause or contribute to concentrations that exceed WQC.

As described above, EPA considered ambient aluminum data for the Ware River in the reasonable potential analysis. Based on EPA's review of available aluminum data for the receiving water, aluminum concentrations occasionally exceed the chronic criterion upstream and downstream of the discharge. In addition, concentrations of aluminum are generally higher upstream than downstream of the Facility. Table 5 summarizes aluminum concentrations in the Ware River downstream at the Ware WWTP (approximately one mile downstream of the Facility) and upstream at the Hardwick-Gilbertville Water Pollution Control Facility (approximately five miles upstream of the Facility).

Table 5: WET Test Aluminum Monitoring Data

Sample Date	Ware River Aluminum Concentration (mg/L)	
	Ware WWTP	Hardwick-Gilbertville WPCF
2/20/2012	0.070	---
11/14/2011	0.146	---
8/8/2011	0.038	---
5/9/2011	0.047	---
11/8/2010	0.109	---
8/11/2010	---	0.076
8/9/2010	0.090	---
5/12/2010	---	0.092
2/8/2010	0.082	---
11/9/2009	0.094	---
8/12/2009	---	0.138
5/13/2009	---	0.110
8/13/2008	---	0.184
5/14/2008	---	0.088

Because upstream ambient aluminum concentration was unavailable for the Facility for EPA’s analysis, it is not clear if the receiving water is in attainment of WQSs for aluminum in the vicinity of the discharge. Also, the extent of nutrient cycling behind impoundments in this area of the Ware River is unknown and the potential for aluminum to bind to nutrients or sediment behind these impoundments has not been quantified. As a result, the Draft Permit includes monitoring requirements for aluminum in both the effluent and the Ware River twice per year in conjunction with the WET testing. If subsequent WET testing at the Facility demonstrates ambient conditions are significantly different from those used in EPA’s analysis, the Draft Permit may be modified pursuant to 40 CFR §122.62.

Lead, Cadmium, Chromium, and Nickel

From May 1, 2007 through April 30, 2012, the discharge from the Facility did not contain concentrations of these metals above the laboratory PQLs. For this reason, there is no reasonable potential for the Facility’s discharges of cadmium, chromium or nickel to cause or contribute to concentrations that exceed WQC. Therefore, the Draft Permit does not include effluent limitations for these metals. However, because these metals are occasionally detected in the Ware River, monitoring for these metals will continue twice per year in conjunction with WET testing.

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 no longer requires the monitoring of these metals. However, because these metals may affect the toxicity of metals such as copper and aluminum, monitoring for calcium and magnesium will continue twice per year in conjunction with WET testing.

7.8 Total Residual Chlorine (TRC)

Chlorine and chlorine compounds can be extremely toxic to aquatic life. As described above, the Facility uses municipal water supply 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.

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. EPA determines the reasonable potential for concentrations of TRC to cause or contribute to concentrations that exceed WQC based on the *Technical Support Document for Water Quality-based Toxics Control*: EPA/505/2-90-001, 1991.

The Facility has monitored concentrations of TRC monthly from May 1, 2007 to April 30, 2012. During this period, the effluent concentration of TRC ranged from below the PQL of 0.020 mg/L to 0.051 mg/L. Using the calculated available dilution in the Ware River (478:1), EPA calculated the TRC effluent limits as follows:

$$\begin{aligned}\text{Acute TRC limit} &= 0.019 \text{ mg/l} * 478 = 9.082 \text{ mg/L} \\ \text{Chronic TRC limit} &= 0.011 \text{ mg/l} * 478 = 5.258 \text{ mg/L}\end{aligned}$$

EPA has determined that concentrations of TRC do not have reasonable potential to cause or contribute to concentrations that exceed WQC. However, because concentrations of TRC in the effluent discharge are occasionally above the acute and chronic exposure limits for freshwater organisms, the Draft Permit requires monthly TRC monitoring.

7.9 Bis (2-ethylhexyl) phthalate (DEHP)

Except for DEHP, a toxic plasticizer widely used in the manufacturing of PVC, BAT effluent limitations guidelines promulgated in 40 CFR § 463.13 are the same as the BPT ELGs in 40 CFR § 463.12. Since the technologies considered during the development of the proposed rule for the Plastics Molding and Forming Point Source Category cannot be used to control DEHP, EPA reserved the BAT ELGs for this pollutant pending further study.⁶

While the Facility purchases PVC that could contain DEHP for use in plastic coating, the Facility does not manufacture this or any plasticizer. In addition, concentrations of DEHP were not detected above the practical quantification limit (PQL) of 0.005 mg/L in the Facility's discharge between January 2001 and August 2006. As a result, EPA's BPJ BAT determination for this pollutant, for this facility, is non-detect discharge of DEHP. Although EPA eliminated monitoring requirements for DEHP for the Facility's discharge in the 2007 permit, EPA is including a once per year monitoring (with a non-detect limit) in this draft.

⁶ See *Development Document For Effluent Limitations Guidelines and Standards For The Plastics Molding and Forming Point Source Category*. Report EPA 440/1-84/069, December 1984.

7.10 Whole Effluent Toxicity Testing (LC-50)

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 prohibits 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. WET testing is conducted to determine whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination which produces a toxic amount of pollutants in the receiving water. Therefore, toxicity testing is being 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...*" EPA and MassDEP believe that the complexity of this effluent is such that toxicity testing is required to evaluate and address any water quality impacts. MassDEP in its "Implementation Policy for the Control of Toxic Pollutants in Surface Waters" (February 23, 1990) sets forth toxicity limits according to dilution factors based on perceived risk. Results of these toxicity tests will demonstrate compliance with the Massachusetts WQSs.

Therefore, the Draft Permit continues LC₅₀ testing requirements for **effluent and dilution water** two times a year for one species. The Permittee must collect the dilution water sample from the Ware River, at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. In the case where the Permittee has received written approval to use an alternate dilution water, an additional receiving water control (0% effluent) must still be tested. To clarify the effluent characteristics required for this testing, EPA has included WET parameters on the DMRs. The Draft Permit allows for the possibility of reducing the frequency of WET testing after two tests. This reporting requirement is consistent with toxicity policy for dilution in the low risk category (>100:1), since available dilution for the Facility is 478:1.

8.0 Essential Fish Habitat (EFH)

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 the Ware River is not covered by the EFH designation for riverine systems at Latitude 42° 15' 29" Longitude 72° 14' 22" as determined by the NOAA EFH Mapper.⁷ However, the Ware River is a tributary of the Chicopee River, which ultimately flows into the Connecticut River. The Connecticut River system has been designated as EFH for Atlantic salmon (*Salmo salar*). The last remnant stock of Atlantic salmon indigenous to the Connecticut River is believed to have been extirpated by the early 1800's. However, an active effort has been underway throughout the Connecticut River system since 1967 to restore this historic run. This stocked anadromous EFH species has the potential to be present during one or more life stages in the Ware River within the area of the Facility's discharge.⁸

EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to Atlantic salmon, if present, for the following reasons:

- The quantity of the discharge from the Facility is only 0.025 MGD;
- The available dilution in the Ware River for the Facility discharge is high (478:1);
- The facility withdraws no water from the Ware River; therefore no life stages of Atlantic salmon are vulnerable to impingement or entrainment from this facility;
- EPA has completed analysis to determine that no reasonable potential exists for concentrations of metals including copper, lead, and zinc in discharges from the Facility to exceed water quality criteria specifically protective of aquatic organisms;
- Acute toxicity testing on *Ceriodaphnia dubia* is required two (2) times per year; and
- The permit prohibits any violation of Massachusetts WQSs.

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 Connecticut River 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.

9.0 Endangered Species Act (ESA)

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

⁷ NOAA EFH Mapper available at http://sharpfin.nmfs.noaa.gov/website/EFH_Mapper/map.aspx

⁸See *Juvenile Atlantic Salmon Stocking Locations in the Connecticut River*. U.S. Fish and Wildlife Service, Connecticut River Coordinator's Office: 1999. Available at <http://www.fws.gov/r5csrc/images/Stuff/rgatsjv.jpg>

United States Fish and Wildlife Service (USFWS) for freshwater species, and the National Marine Fisheries Service (NMFS) for marine species and anadromous fish.

No federally listed threatened or endangered species have been identified for the Town of Ware.⁹ However, EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in Hampshire County to determine if the re-issuance of this NPDES permit could potentially impact any such listed species. Two threatened species were identified for Hampshire County.¹⁰ According to the USFWS, the small whirled pogonia (*Isotria medeoloides*) is found in “forests with somewhat poorly drained soils and/or a seasonally high water table,” and the Puritan tiger beetle (*Cicindela puritana*) is found in “sandy beaches along the Connecticut River.” These species are not aquatic.

The federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) is found in “rivers and streams” in Hatfield, Amherst and Northampton. These areas are between 6 and 13 miles northwest of the Facility, at their closest points. The hills in Pelham and Belchertown separate these areas from Ware. Tributaries in the location nearest the Facility, Amherst, generally drain westward to the Connecticut River and discharge upstream of the confluence with the Chicopee River. Tributaries near the Facility generally drain south toward the Ware River. Therefore, it is unlikely that discharges from the Facility would impact this species.¹¹

The two endangered species of anadromous fish which occur in Massachusetts, shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus*), have not been identified in the Ware River.¹² However, as discussed, above, the Ware River ultimately drains to the Connecticut River, where these species occur.

According to a NMFS letter dated December 19, 2011¹³ for the Chicopee Water Pollution Control Facility discharge to the Connecticut River, “extensive sampling and the lack of any strong evidence of Atlantic sturgeon spawning indicates that the presence of this species in the vicinity of the discharge is unlikely.” In addition, the Holyoke Dam separates shortnose sturgeon in the Connecticut River into an upriver group (above the Dam) and a lower river group that occurs below the Dam to Long Island Sound. NMFS determined that adult and juvenile shortnose sturgeon are likely to occur in the vicinity of the Chicopee facility outfall year round, but further determined that Early Life Stages are less likely to be observed in this area of the Connecticut River, since spawning occurs further upstream in the Montague area near the confluence of the Deerfield and Connecticut Rivers.

⁹See listings for Ware in “Rare Species Occurrences by Town” at http://www.mass.gov/dfwele/dfw/nhosp/info_by_town.htm

¹⁰See listings for Hampshire County in *Federally Listed Endangered and Threatened Species in Massachusetts* at http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm

¹¹ See *The Dwarf Wedgemussel Waters of Massachusetts* at http://www.fws.gov/newengland/pdfs/MA_DWM.pdf

¹²See documents for shortnose sturgeon and Atlantic salmon at http://www.mass.gov/dfwele/dfw/nhosp/species_info/esa_list/esa_list.htm

¹³ December 19, 2011, Letter from Patricia A. Kurkul, Regional Administrator, NOAA, National Marine Fisheries Service, Northeast Region, to John H. Nagle, EPA Region 1 (“NOAA’s December 19, 2011, Chicopee WPCF Consultation Letter”) (addressing ESA issues concerning EPA’s proposed NPDES permit for the Chicopee, MA, WPCF).

The Facility is located approximately 30 river miles upstream of the nearest confluence with the Connecticut River and the Chicopee facility discussed in the paragraph above. Multiple impoundments are located along the Chicopee River between the confluence with the Ware River and the confluence with the Connecticut River. There are no current provisions for fish passage for at least three of these dams (Chicopee Falls Dam, Indian Orchard Station, and Putts Bridge Dam).¹⁴ Based on this assessment and the expected normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge. Therefore, consultation with NMFS under Section 7 of the ESA is not required.

10.0 Monitoring

The monitoring requirements have been established to yield data representative of the Facility's pollutant discharges under the authority of Sections 308(a) and 402(a)(2) of the CWA and consistent with 40 CFR §§ 122.41 (j), 122.43(a), 122.44(i) and 122.48. The approved analytical procedures for sample analysis are found in 40 CFR Part 136 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.

The Draft Permit includes new provisions related to DMR submittals to EPA and the State. The Draft Permit requires that, no later than one year 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 one year from the effective date of the permit), the Permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act 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 notice from MassDEP.

¹⁴ See Segments MA36-07, MA36-22, MA36-23, MA36-24, and MA36-25 in *Chicopee River Watershed 2003 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; October 2008, Report Number: 36-AC-3.

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 sixty (60) days prior to the date the facility 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 twelve (12) months. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (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.

11.0 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 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.

12.0 Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Shauna Little, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch, 5 Post Office Square, OPE 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.

13.0 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

Claire A. Golden, MassDEP
Surface Water Permitting Program
205B Lowell Street
Wilmington, Massachusetts 01887
Telephone: (978) 694-3244
FAX: (978) 694-3498
Email: claire.golden@state.ma.us

8/28/2012

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
OFFICE OF ECOSYSTEM PROTECTION
REGION I
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF
THE UNITED STATES UNDER SECTION 301, 316(A), AND 402 OF THE CLEAN WATER
ACT, AS AMENDED, AND UNDER SECTIONS 27 AND 43 OF THE MASSACHUSETTS
CLEAN WATERS ACT, AS AMENDED, AND REQUEST FOR STATE CERTIFICATION
UNDER SECTION 401 OF THE CLEAN WATER ACT.

DATE OF NOTICE: August 28, 2012

PERMIT NUMBER: **MA0030571**

PUBLIC NOTICE NUMBER: MA-019-12

NAME AND MAILING ADDRESS OF APPLICANT:

Mr. Brian Page
Quabbin Wire & Cable Company, Inc.
10 Maple Street
Ware, MA 01082

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Quabbin Wire & Cable Company, Inc.
10 Maple Street
Ware, Massachusetts 01081

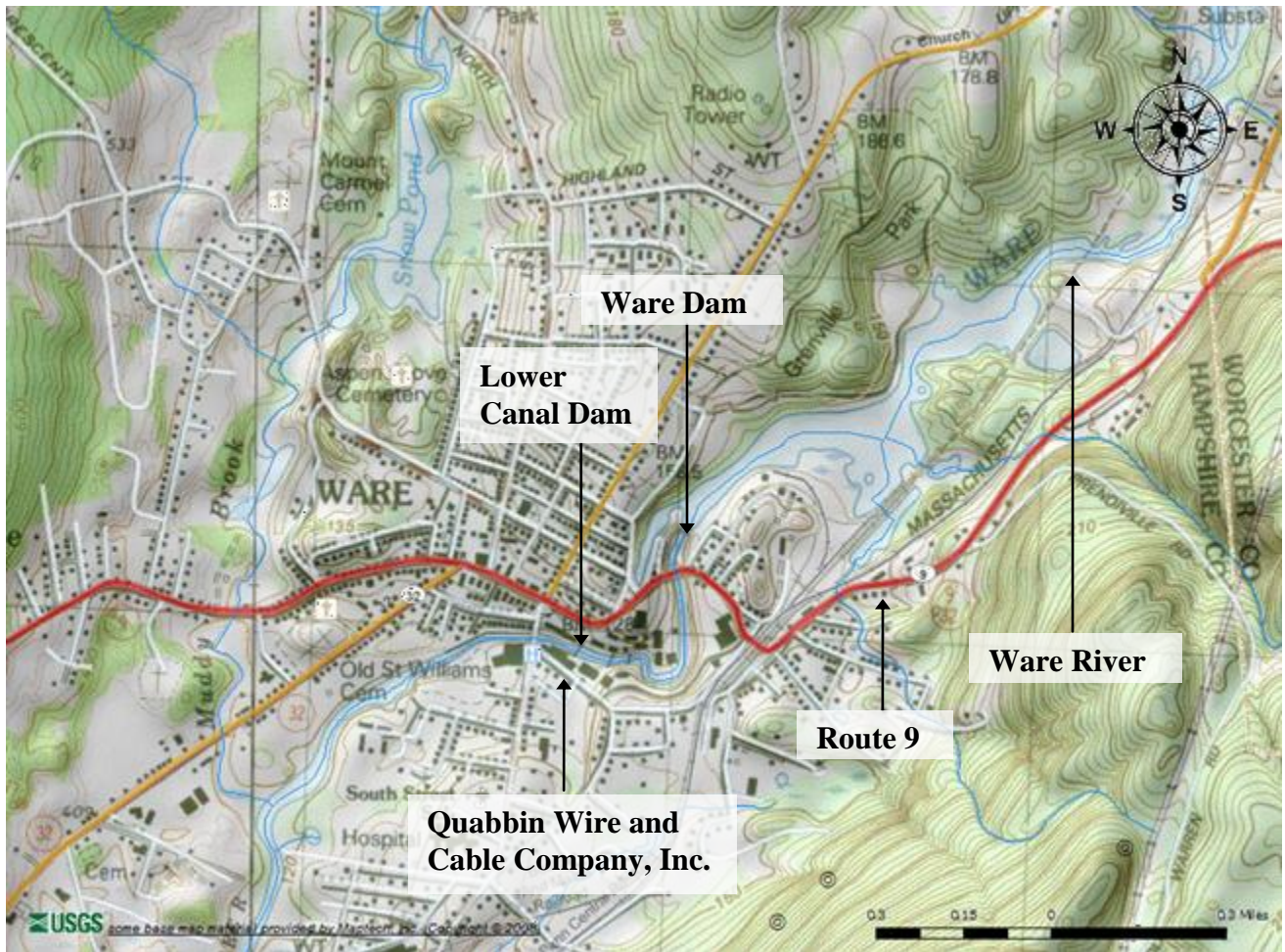
RECEIVING WATER(S): Ware River

RECEIVING WATER(S) CLASSIFICATION(S): Class B

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a draft permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00 and State Surface Water Quality Standards at 314 CMR 4.00. EPA has formally requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

Attachment 1: Quabbin Wire and Cable Company, Inc. Location Map



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

Attachment 3: Available Discharge Monitoring Data

QUABBIN WIRE & CABLE CO., INC. - MA0030571					
Outfall Serial Number 003					
Monthly Reporting					
Monitoring Period End Date	Flow		pH		Temperature, deg. Fahrenheit
	Mgal/d	Mgal/d	SU	SU	deg F
	Monthly Avg	Daily Max	Minimum	Maximum	Daily Max
05/31/2007	0.00450	0.01887	7.66	7.73	81
06/30/2007	0.00496	0.01721	7.77	7.79	81.5
07/31/2007	0.00351	0.01948	7.57	7.65	81
08/31/2007	0.00938	0.01822	7.89	7.96	81
09/30/2007	0.00660	0.01332	7.85	7.89	81
10/31/2007	0.00653	0.01327	7.74	7.77	81
11/30/2007	0.00433	0.00899	7.84	7.92	79
12/31/2007	0.00332	0.00746	7.85	7.86	79
01/31/2008	0.00368	0.00726	7.96	8.02	79
02/29/2008	0.00232	0.00605	7.96	8.00	79
03/31/2008	0.00297	0.00906	7.85	7.93	82
04/30/2008	0.00585	0.01055	8.11	8.16	79
05/31/2008	0.00474	0.01142	8.03	8.11	81
06/30/2008	0.00508	0.01190	7.95	8.01	82
07/31/2008	0.00634	0.01247	8.09	8.14	82
08/31/2008	0.00562	0.01867	8.01	8.05	82
09/30/2008	0.00511	0.02082	7.97	8.03	82
10/31/2008	0.00472	0.01584	7.75	7.78	80
11/30/2008	0.00318	0.01079	7.97	8.04	80
12/31/2008	0.00344	0.01374	7.97	8.11	80
01/31/2009	0.00191	0.01324	7.91	7.97	80
02/28/2009	0.00156	0.00412	7.66	7.73	81
03/31/2009	0.00243	0.01124	7.88	7.91	80
04/30/2009	0.00180	0.00800	7.95	7.99	81
05/31/2009	0.00077	0.00346	7.85	7.92	80
06/30/2009	0.00264	0.01211	7.90	8.00	81
07/31/2009	0.00227	0.00738	7.88	7.94	80
08/31/2009	0.00456	0.01841	7.70	7.79	80
09/30/2009	0.00355	0.01407	7.82	7.88	81
10/31/2009	0.00196	0.01121	7.94	8.03	80
11/30/2009	0.00144	0.00481	7.50	7.56	80
12/31/2009	0.00169	0.00693	7.90	7.95	80
01/31/2010	0.00145	0.00591	7.97	8.01	80
02/28/2010	0.00056	0.00237	7.99	8.02	80
03/31/2010	0.00125	0.00316	7.80	7.84	80
04/30/2010	0.00211	0.00912	8.10	8.14	80
05/31/2010	0.00219	0.00500	8.03	8.08	82
06/30/2010	0.00356	0.00756	7.74	7.77	80
07/31/2010	0.00385	0.01041	7.92	8.01	81
08/31/2010	0.00585	0.01367	7.95	7.99	80

NPDES Permit No. MA0030571

09/30/2010	0.00377	0.00941	7.81	7.92	81
10/31/2010	0.00269	0.00866	7.66	7.78	80
11/30/2010	0.00169	0.00556	8.10	8.11	80
12/31/2010	0.00053	0.00181	7.76	7.82	80
01/31/2011	0.00064	0.00311	8.09	8.12	80
02/28/2011	0.00077	0.00337	7.87	7.91	80
03/31/2011	0.00124	0.00401	7.59	7.66	80
04/30/2011	0.00127	0.00437	7.67	7.80	80
05/31/2011	0.00216	0.00586	7.55	7.62	81
06/30/2011	0.00293	0.00867	7.66	7.78	80
07/31/2011	0.00339	0.00931	7.89	7.96	80
08/31/2011	0.00556	0.01271	7.89	7.93	80
09/30/2011	0.00504	0.01035	7.58	7.79	80
10/31/2011	0.00275	0.00776	7.91	7.99	81
11/30/2011	0.00162	0.00436	7.89	7.98	80
12/31/2011	0.00111	0.00493	7.82	7.87	80
01/31/2012	0.00143	0.00388	8.00	8.04	80
02/29/2012	0.00122	0.00369	7.97	8.09	80
03/31/2012	0.00112	0.00377	7.78	7.90	80
04/30/2012	0.00174	0.00414	7.76	7.83	80
2007 Permit Limits	.0082 Mgal/d	.02 Mgal/d	6.5 SU	8.3 SU	83 deg F
Minimum	0.00053	0.00181	7.50	7.56	79
Maximum	0.00938	0.02082	8.11	8.16	82
Average	0.00310	0.00929	7.85	7.92	80.3
Standard Deviation	0.00188	0.00495	0.148	0.139	0.790
# of measurements	60	60	60	60	60

NPDES Permit No. MA0030571

QUABBIN WIRE & CABLE CO., INC. - MA0030571							
Outfall Serial Number 003							
Quarterly Reporting							
Monitoring Period End Date	BOD, 5-day, 20 deg. C	TSS	Oil & Grease	Total Cu	Total Pb	Total Zn	Total Sb
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
09/30/2007	0	0	0	0.0727	0	0.0409	0
12/31/2007	0	0	0	0.0434	0	0.0228	0
03/31/2008	0	0	0	0.0672	0	0.0288	0
06/30/2008	0	0	0	0.0642	0	0.0364	0
09/30/2008	0	0	0	0.0372	0	0.0234	0
12/31/2008	0	0	1.2	0.0451	0	0.013	0
03/31/2009	0	0	0	0.0694	0	0.0372	0
06/30/2009	0	0	0	0.0785	0	0.0334	0
09/30/2009	9.6	0	0	0.0684	0	0.029	0
12/31/2009	0	0	1.4	0.0546	0	0.0376	0
03/31/2010	4	0	0	0.137	0	0.0564	0.008
06/30/2010	0	0	0	0.0497	0	0.0238	0
09/30/2010	0	0	0	0.0273	0	0.0222	0
12/31/2010	18	0	0	0.0385	0	0.0426	0
03/31/2011	0	0	0	0.0568	0	0.0378	0
06/30/2011	0	0	0	0.0778	0	0.0324	0
09/30/2011	0	0	0	0.0258	0	0.0184	0
12/31/2011	0	0	0	0.0439	0	0.0198	0
3/31/2012	0	0	0	0.053	0	0.0146	0.0074
2007 Permit Limits	26 mg/L	19 mg/L	15 mg/L	Report	Report	Report	Report
Minimum	0	0	0	0.0258	0	.013	.
Maximum	18	0	1.4	0.137	0	.0564	0.008
Average	1.6632	0	0.1368	0.0584	0	.03	0.0008
Standard Deviation	4.5923	0	0.4112	0.0248	0	.011	0.0024
# of measurements	19	19	19	19	19	19	19

NPDES Permit No. MA0030571

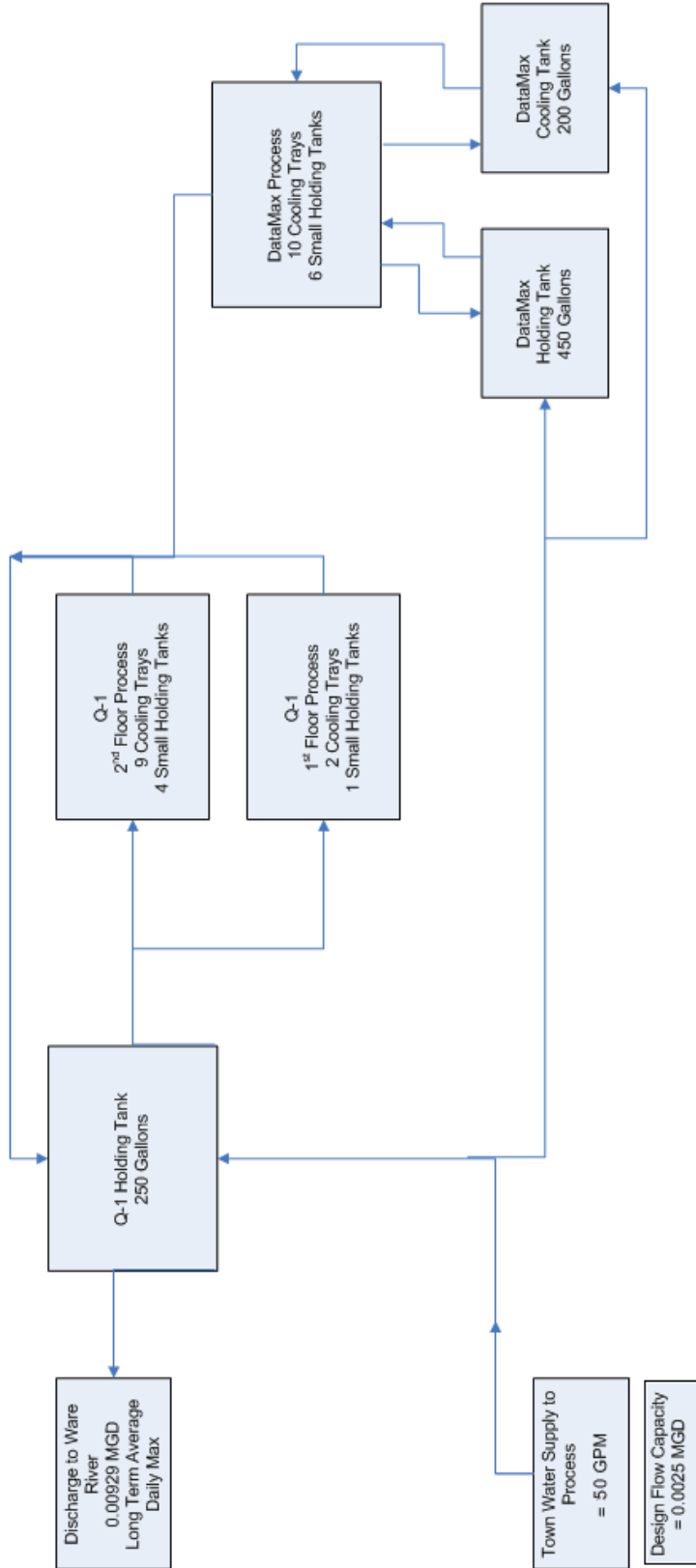
QUABBIN WIRE & CABLE CO., INC. - MA0030571	
Monthly Total Residual Chlorine Monitoring	
Sample Date	TRC (mg/L)
07/16/2007	0
08/13/2007	0
09/11/2007	0.030
10/10/2007	0
11/07/2007	0
12/06/2007	0
01/09/2008	0.048
02/06/2008	0.051
03/12/2008	0.047
04/09/2008	0.048
05/08/2008	0
06/13/2008	0.043
07/10/2008	0
08/06/2008	0.031
09/10/2008	0
10/08/2008	0
11/06/2008	0
12/10/2008	0
01/14/2009	0.048
02/11/2009	0
03/11/2009	0
04/08/2009	0.039
05/06/2009	0
06/10/2009	0.021
07/15/2009	0
08/14/2009	0
09/10/2009	0.027
10/08/2009	0
11/11/2009	0
12/09/2009	0
01/13/2010	0
02/10/2010	0.023
03/10/2010	0
04/07/2010	0.040
05/12/2010	0
06/09/2010	0.029
07/14/2010	0.036
08/11/2010	0
09/08/2010	0
10/06/2010	0.023

NPDES Permit No. MA0030571

11/11/2010	0
12/08/2010	0
01/13/2011	0.025
02/10/2011	0.023
03/09/2011	0
04/07/2011	0
05/16/2011	0
06/08/2011	0
07/06/2011	0.021
08/11/2011	0
09/20/2011	0
10/06/2011	0
11/09/2011	0
12/07/2011	0
2007 Permit Limits	Not Applicable
Minimum	0
Maximum	0.051
Average	0.011
Standard Deviation	0.017
# of measurements	54

Attachment 4: Quabbin Wire and Cable Company, Inc. Process Flow Diagram

Quabbin Wire & Cable Co., Inc.
Process Flow Diagram
Permit # MA0030571



Revised 8/8/2012

Attachment 5: Calculation of Estimated 7Q10 and Dilution Factor for Outfall 003

Estimated 7Q10 at Outfall 003

Nearest U.S. Geological Gauging Station = 01173500 (@ Ware River)

7Q10 Flow_{@Ware} = 22 cubic feet per second (cfs)

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

$$\frac{7Q10_{@Ware}}{\text{Drainage Area}_{@Ware}} = \frac{7Q10_{@Outfall003}}{\text{Drainage Area}_{@Outfall003}}$$

Drainage Area_{@Ware} = 197 square miles (mi²)

Drainage Area_{@Outfall003}¹ = 166 mi²

7Q10_{@Outfall003} = Q_R

Therefore:

$$\frac{22 \text{ cfs}}{197 \text{ mi}^2} = \frac{Q_R}{166 \text{ mi}^2}$$

And:

$$Q_R = 22 \text{ cfs} * \frac{166 \text{ mi}^2}{197 \text{ mi}^2} = 18.5 \text{ cfs (11.95 MGD)}$$

Dilution Factor

$$\begin{aligned} \text{Dilution Factor} &= [Q_R + (Q_P * 1.55)] / (Q_P * 1.55) \\ &= [18.5 + (0.025 * 1.55)] / (0.025 * 1.55) = 478 \end{aligned}$$

Where:

- Q_R = Estimated 7Q10 for the receiving water at Outfall 003 = 18.5 cfs
- Q_P = Maximum permitted discharge rate = 0.025 million gallons per day (MGD) (0.038 cfs)
- 1.55 = Factor to convert MGD to cfs.

¹ Determined using USGS StreamStats in Massachusetts mapping tool at <http://water.usgs.gov/osw/streamstats/massachusetts.html>

Attachment 6: Reasonable Potential Analysis for Outfall 003 Metals

Hardness Analysis²

Hardness data used to calculate hardness-dependent metals criteria are from the Facility’s Whole Effluent Toxicity (WET) test reports from 2007 through 2012. The hardness values used in calculations below are the median hardness values measured in the Facility’s discharge and the Ware River immediately upstream of the discharge.

Summary of Hardness Data

Monitoring Period End Date	Effluent Hardness (as CaCO ₃ in mg/L)	Upstream Hardness (as CaCO ₃ in mg/L)
06/30/2007	180	24
09/30/2007	47.9	16
06/30/2008	46	20
09/30/2008	44	20
06/30/2009	58	28
09/30/2009	54	20
06/30/2010	60	20
09/30/2010	136	16
06/30/2011	44.8	22
09/30/2011	41.2	18

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

$$Q_r C_r = Q_d C_d + Q_s C_s$$

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:

$$C_r = \frac{(0.025 \text{ MGD} \times 50.95 \text{ mg/L}) + (11.95 \text{ MGD} \times 20 \text{ mg/L})}{11.97 \text{ MGD}}$$

$$= \mathbf{20.06 \text{ mg/L}}$$

Freshwater Metals Criteria^{3,4}

Using the estimated downstream hardness value of 20.06 mg/L and a conversion factor to convert recoverable to dissolved metals, EPA determined the chronic and acute criteria for metals as follows:

² 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.

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/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/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:

Copper: Chronic criteria $e((0.8545*\ln 20.06) + (-1.702)) = 2.36 \mu\text{g/L}$ (0.0023 mg/L)
 Acute criteria $e((0.9422*\ln 20.06) + (-1.700)) = 3.08 \mu\text{g/L}$ (0.0030 mg/L)

Zinc: Chronic criteria $e((0.8473*\ln 20.06) + (0.8840)) = 30.72 \mu\text{g/L}$ (0.0307 mg/L)
 Acute criteria $e((0.8473*\ln 20.06) + (0.8840)) = 30.72 \mu\text{g/L}$ (0.0307 mg/L)

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

Aluminum: Chronic criteria: 87 $\mu\text{g/L}$ (0.087 mg/L)
 Acute criteria: 750 $\mu\text{g/L}$ (0.750 mg/L)

Antimony: Human health organism-only criteria: 640 $\mu\text{g/L}$ (0.640 mg/L)

Projected Effluent Concentrations⁵

EPA used metals data from the quarterly 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 the effluent data from 2007 through 2012. 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. Lead, cadmium, chromium and nickel are not included in this evaluation because concentrations of these metals were not detected in the effluent above the laboratory PQLs.

Copper: 95th percentile concentration = 0.108 mg/L
 99th percentile concentration = 0.144 mg/L

Zinc: 95th percentile concentration = 0.053 mg/L
 99th percentile concentration = 0.068 mg/L

Aluminum: 95th percentile concentration = 0.071 mg/L
 99th percentile concentration = 0.088 mg/L

Antimony: 95th percentile concentration = 0.0075 mg/L

⁵The 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.

Ambient Concentrations

Since ambient concentration data for the receiving water immediately upstream of the discharge was unavailable, EPA used the best available data from the Ware WWTP WET test for 2009 through 2012 (NPDES Permit No. MA0100889).

Summary of Ware River Metals Concentrations

Sample Date	Al (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Pb (mg/L)	Ni (mg/L)	Zn (mg/L)
11/9/2009	0.094	0	0	0.002	0	0	0.011
2/8/2010	0.082	0	0	0	0	0	0.009
8/9/2010	0.09	0	0	0.002	0.001	0	0.066
11/8/2010	0.109	0	0.002	0.003	0	0	0.016
5/9/2011	0.047	0	0	0.01	0	0.002	0.076
8/8/2011	0.038	0	0	0.001	0.002	0	0.018
11/14/2011	0.146	0	0	0	0	0	0.009
2/20/2012	0.07	0	0	0.001	0	0	0.009
Median Value	0.086	0	0	0.0015	0	0	0.0135

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. As described above, these data were unavailable for the Facility. To be conservative, EPA used the median values for each metal shown above to determine reasonable potential for metals as follows:

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

Where:

- C_r = Concentration below outfall
- Q_d = Discharge flow
- C_d = 99th percentile discharge concentration
- Q_s = Upstream flow
- C_s = Upstream concentration
- Q_r = Streamflow below outfall (effluent + upstream)

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

Where:

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

Therefore:

Copper: Chronic C_r =
$$\frac{(0.025 \text{ MGD} \times 0.108 \text{ mg/L}) + (11.95 \text{ MGD} \times 0.0015 \text{ mg/L})}{11.97 \text{ MGD}}$$

= 0.00172 mg/L < 0.023 mg/L (chronic criterion)

= No reasonable potential

NPDES Permit No. MA0030571

	Acute C_r	=	$\frac{(0.025\text{MGD} \times 0.144 \text{ mg/L}) + (11.95 \text{ MGD} \times 0.0015 \text{ mg/L})}{11.97 \text{ MGD}}$
		=	0.00179 mg/L < 0.030 mg/L (acute criterion)
		=	No reasonable potential
Zinc:	Chronic C_r	=	$\frac{(0.025 \text{ MGD} \times 0.053 \text{ mg/L}) + (11.95 \text{ MGD} \times 0.0135 \text{ mg/L})}{11.97 \text{ MGD}}$
		=	0.0135 mg/L < 0.0307 mg/L (chronic criterion)
		=	No reasonable potential
	Acute C_r	=	$\frac{(0.025\text{MGD} \times 0.068 \text{ mg/L}) + (11.95 \text{ MGD} \times 0.0135 \text{ mg/L})}{11.97 \text{ MGD}}$
		=	0.0136 mg/L < 0.0307 mg/L (acute criterion)
		=	No reasonable potential
Aluminum:	Chronic C_r	=	$\frac{(0.025 \text{ MGD} \times 71.7 \text{ } \mu\text{g/l}) + (11.95 \text{ MGD} \times 86 \text{ } \mu\text{g/l})}{11.97 \text{ MGD}}$
		=	0.085 mg/L < 0.087 mg/L (chronic criterion)
		=	No reasonable potential
	Acute C_r	=	$\frac{(0.025\text{MGD} \times 88.8 \text{ } \mu\text{g/L}) + (11.95 \text{ MGD} \times 86 \text{ } \mu\text{g/L})}{11.97 \text{ MGD}}$
		=	0.086 mg/L < 0.750 mg/L (acute criterion)
		=	No reasonable potential
Antimony:	Chronic C_r (Organism-Only)	=	$\frac{(0.025 \text{ MGD} \times 7.5 \text{ } \mu\text{g/l}) + (11.95 \text{ MGD} \times 0 \text{ } \mu\text{g/l})}{11.97 \text{ MGD}}$
		=	0.018 $\mu\text{g/l}$ < 5.6 $\mu\text{g/L}$ (organism-only criterion)
		=	No reasonable potential

INFORMATION ABOUT THE DRAFT PERMIT:

A fact sheet (describing the type of facility; type and quantities of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions considered in preparing this draft permit) and the draft permit may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html or by writing or calling EPA's contact person named below:

Shauna Little
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1989

The administrative record containing all documents relating to this draft permit is on file and may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **September 26, 2012**, to the U.S. EPA, 5 Post Office Square, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing to EPA and the State Agency for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator 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.

DAVID FERRIS, DIRECTOR
MASSACHUSETTS WASTEWATER
MANAGEMENT PROGRAM
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

STEPHEN S. PERKINS, DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
ENVIRONMENTAL PROTECTION
AGENCY – REGION 1