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"),

Massachusetts Water Resources Authority (MWRA)

is authorized to discharge from a facility located at

John J. Carroll Water Treatment Plant
84 D'Angelo Drive
Marlborough, MA 01752

to receiving water named

Sudbury Reservoir (MA82106)
Concord River Watershed

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

This Permit shall become effective on [DATE].[1]

This Permit expires at midnight on [DATE].

This Permit supersedes the Permit issued on October 2, 2019.

This Permit consists of this **cover page**, **Part I**, and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

_____
Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the Permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

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 dewatering wastewater[1] consisting of dechlorinated drinking water from regular maintenance drawdowns and overflow through Outfall Serial Number 001 to the Sudbury Reservoir via the Wachusett Aqueduct Open Canal. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
Effluent Flow[7]	Report MGD	25 MGD	1/day	Meter or Estimate
Total Suspended Solids (TSS)	30 mg/L	50 mg/L	1/event	Grab
pH[8]	6.5 - 8.3 S.U.		1/event	Grab
Total Residual Chlorine (TRC)[9]	110 µg/L	190 µg/L	1/event	Grab
Ammonia Nitrogen[10]	---	Report mg/L	1/event	Grab
Copper, Total Recoverable[11]	---	Report µg/L	1/year	Grab
Lead, Total Recoverable[12]	---	Report µg/L	1/year	Grab
Hardness[13]	---	Report mg/L	1/year	Grab

Ambient Characteristic[14]	Reporting Requirements		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
Ammonia Nitrogen[10]	---	Report mg/L	1/event	Grab
Copper, Total Recoverable[11]	---	Report µg/L	1/year	Grab
Lead, Total Recoverable[12]	---	Report µg/L	1/year	Grab
Hardness[13]	---	Report mg/L	1/year	Grab

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge remediation wastewater[1] consisting of dechlorinated drinking water from regular maintenance drawdowns and overflow through Outfall Serial Number 001 to the Sudbury Reservoir via the Wachusett Aqueduct Open Canal. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[2,3,4]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[5]**	**Sample Type[6]**
Effluent Flow[7]	Report MGD	25 MGD	1/day	Meter or Estimate
Total Suspended Solids (TSS)	30 mg/L	50 mg/L	1/event	Grab
pH[8]	6.5 - 8.3 S.U.		1/event	Grab
Total Residual Chlorine (TRC)[9]	110 µg/L	190 µg/L	1/event	Grab
Ammonia Nitrogen[10]	---	Report mg/L	1/event	Grab

Ambient Characteristic[14]	**Reporting Requirements**		**Monitoring Requirements[2,3,4]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[5]**	**Sample Type[6]**
Ammonia Nitrogen[10]	---	Report mg/L	1/event	Grab

Footnotes:

1. Discharges of dewatering and remediation wastewater from the Facility are limited to those necessary for operation, maintenance, repair, testing, construction, and emergency conditions at the Facility, which assure efficient operation and/or prevents loss of life, personal injury, or severe property damage. Dewatering wastewater is defined as drinking water held in the Facility's storage tanks or operational appurtenances (e.g., drawdown). Remediation wastewater is defined as water used for the purposes of maintenance, repair, testing, construction or emergency activities to which chemical(s), additive(s), and/or additional pollutants related to these activities have been added (e.g., disinfection).

2. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the manhole adjacent to Outfall 001. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA). The Permittee shall report the results to EPA and the Massachusetts Department of Environmental Protection (the "State") of any additional testing above that required herein, if testing is done in accordance with 40 CFR Part 136.

3. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

4. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For calculating and reporting the average monthly concentration when one or more values are not detected, assign a value of zero to all non-detects and report the average of all the results. The number of exceedances shall be enumerated for each parameter in the field provided on every Discharge Monitoring Report (DMR).

5. A discharge event is defined as any measurable discharge that follows any operation, maintenance, repair, testing, construction, or emergency condition. Measurement frequency of 1/day is defined as the recording of one measurement for each 24-hour period. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year.

If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

6. A minimum of one grab sample shall be collected when the discharge is entering the Wachusett Aqueduct Open Canal for each discharge event. Samples shall be representative of the discharge during the event. If the discharge event occurs intermittently, additional samples of the discharge event are not required.

7. Effluent flow shall be reported in million gallons per day (MGD). The maximum daily value represents the maximum instantaneous flow passing through the outfall for each 24-hour period that a discharge type occurs during a discharge event. Flow rate shall either be measured using a flow meter or estimated based on the volume passing through the effluent structure over the duration of the discharge.

8. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

9. Monitoring for total residual chlorine (TRC) is only required for discharges that have been previously chlorinated or that contain residual chlorine. For the purposes of this permit, TRC analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level of detection no greater than 30 µg/L.

10. The Permittee shall monitor total ammonia once per discharge event by grab samples. For the purposes of this permit, ammonia analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level no greater than 5 mg/L.

11. The Permittee shall monitor total recoverable copper once per dewatering discharge during annual, reoccurring maintenance. Monitoring for total recoverable copper is also required if a discharge event occurs within thirty (30) days following the application of copper sulfate to the Wachusett Reservoir. For the purposes of this permit, total recoverable copper must be completed using a test method in 40 CFR Part 136 that achieves a minimum level of detection no greater than 6.4 µg/L.

12. The Permittee shall monitor total recoverable lead once per dewatering discharge during annual, reoccurring maintenance. For the purposes of this permit, lead analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level of detection no greater than 1.8 µg/L.

13. The Permittee shall monitor hardness in mg/L of $CaCO_3$ once per dewatering discharge during annual, reoccurring maintenance.

14. Grab samples collected for the Sudbury Reservoir shall be collected from a location representative of ambient conditions in the vicinity of the confluence with the Sudbury

Reservoir, where the Wachusett Aqueduct Open Canal enters the Sudbury Reservoir at Deerfoot Road in Southborough.

Part I.A. continued.

3. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify EPA 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":

      (1) 100 micrograms per liter (µg/L);
      (2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (mg/L) for antimony;
      (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
      (4) Any other notification level established by EPA in accordance with 40 CFR § 122.44(f) and State regulations.

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

      (1) 500 µg/L;
      (2) One mg/L for antimony;
      (3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
      (4) Any other notification level established by EPA in accordance with 40 CFR § 122.44(f) and State 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.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this Permit. Discharges of wastewater from any other point sources are not authorized by this Permit and shall be reported in accordance with Part II.D.1.e.(1) of this Permit (24-hour reporting).

2. The discharge of any sludge and/or bottom deposits from any storage tank or basin at the Facility to the receiving water is prohibited.

C. SPECIAL CONDITIONS

1. Best Management Practices (BMPs)

   a. The Permittee shall develop, implement, and maintain a Best Management Practices (BMP) Plan designed to reduce or prevent the discharge of pollutants in wastewater to waters of the United States. The BMP Plan shall be a written document that is consistent with the terms of the permit and identifies and describes the BMPs employed by the Facility in operating wastewater controls. The BMP Plan must be developed at least once per permit term (i.e., five (5) years) and re-evaluated if any significant changes to the Facility's operations occurs.

   b. The BMP Plan shall be completed (or updated) and certified by the Permittee within 90 days after the effective date of this permit. The Permittee shall certify the BMP Plan has been prepared, that it meets the requirements of this permit, and that it reduces the pollutants discharged in wastewater to the extent practicable. The BMP Plan and certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of the BMP Plan and certification shall be maintained at the Facility and made available to EPA and the State upon request.

   c. The Permittee shall amend and update the BMP Plan within 14 days for any changes at the Facility affecting the BMP Plan. Such changes may include, but are not limited to changes in the design, construction, operation, or maintenance of the Facility, which have a significant effect on the potential for the discharge of pollutants to the waters of the United States. The amended BMP Plan also shall be signed in accordance with the requirements identified in 40 CFR §122.22.

   d. The Permittee shall certify annually that the Facility is in compliance with the requirements of the BMP Plan. If the Facility is not in compliance with any aspect of the BMP Plan, the annual certification shall state the noncompliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in 40 CFR §122.22. The Permittee shall keep a copy of the current BMP Plan, and all BMP Plan certifications (the initial certification, re-certifications, and annual certifications) signed during the effective period of this permit at the Facility and shall make it available for inspection by EPA and MassDEP.

   e. The BMP Plan shall include, at a minimum, the following items:
      1. Documentation of the selection, design, installation, implementation and maintenance of control measures necessary to meet the effluent limitations in this permit, including non-numeric effluent limitations. Any control measures shall be used in accordance with good engineering practices and manufacturer's specifications.

2. A description of the pollution control equipment and procedures used to minimize the discharge to surface waters of suspended solids, floating solids, foam, visible oil sheen, and settleable solids, in order to comply with the permit requirements.
3. Preventative maintenance procedures for the pollution control equipment to ensure that equipment failures are avoided.
4. A characterization of tank bottom residuals generated at the Facility, and how these residuals are generated, controlled.
5. Procedures for handling Facility wastes, including schedules for removal, handling and disposal of materials, a description of where solids removed from the pollution control equipment or appurtenances, including sludge, are stored and/or disposed of, and the control measures used to prevent the removed solids from entering the receiving water. If Facility wastes are to be removed from the Facility, a description of the destination and method of disposal and/or reuse.
6. A record of the following information for all additives and chemicals, (e.g., algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants):
    i. Product name, chemical formula, and manufacturer of the additive/chemical
    ii. Purpose or use of the additive/chemical
    iii. Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each additive/chemical
    iv. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the additive/chemical
    v. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).
7. A description of the training to be provided for employees to assure they understand the goals, objectives, and procedures of the BMP Plan, the requirements of the NPDES Permit, and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit. Training should be conducted on an annual basis. Certification of such training should be recorded and kept on site, along with the BMP Plan certifications.
8. Minimum documentation requirements as follows:
    i. Records of operational and preventive maintenance activities
    ii. Records of the collection and analysis of samples, including, but not limited to sample location, any calculations done at the time of sampling, any sampling or analytical methods used for samples analyzed on site, and sample results so that

an inspector may verify that the sampling was properly conducted.

iii. All documentation of BMP Plan activities shall be kept at the Facility for at least three years from the date the document was generated and provided to EPA or MassDEP upon request.

2. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution that was not reported in the application submitted to EPA or provided through a subsequent written notification submitted to EPA is prohibited. Upon the effective date of this Permit, chemicals and/or additives that have been disclosed to EPA may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this Permit 30 days following written notification to EPA unless otherwise notified by EPA. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The information specified in Part I.C.1.e.(6), above, for each chemical and/or additive that will be discharged.

b. Written rationale that demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) will not add any pollutants in concentrations that exceed any permit effluent limitation; and 2) will not add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

D. REPORTING REQUIREMENTS

Unless otherwise specified in this Permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month following the monitoring period. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this Permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. Because the due dates for reports described in this Permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month following the monitoring period), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this Permit.

3. Submittal of Requests and Reports to EPA Water Division (WD)

   a. The following requests, reports, and information described in this Permit shall be submitted to the NPDES Applications Coordinator in EPA WD:

      (1) Transfer of Permit notice;
      (2) Request for changes in sampling location;
      (3) BMP reports and certifications, if required;
      (4) Request to discharge new chemicals or additives;

   b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

4. Written Notifications

   Written notifications required by Part II, Standard Conditions must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system that will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

5. State Reporting

   See Part I.D.2

6. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this Permit, shall be made to both EPA and to the State. This includes verbal reports and notifications that require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to EPA's Enforcement and Compliance Assurance Division (ECAD) at:

617-918-1510

c. Verbal reports and verbal notifications shall be made to the State's Emergency Response at:

888-304-1133

E. STATE 401 CERTIFICATION CONDITIONS

This Permit is in the process of receiving State water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate all appropriate State water quality certification requirements (if any) into the Final Permit.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

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[1] Updated July 17, 2018 to fix typographical errors.

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 or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage 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, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act 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. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further 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 non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

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 a notification of planned changes or anticipated noncompliance does not stay any permit

condition.

3. Duty to Provide Information

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

4. 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).

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

a. In accordance with 40 C.F.R. 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 C.F.R. 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.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 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.

7. Duty to Reapply

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

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

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. 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 which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (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. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate 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

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

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

improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
(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.

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 of 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 5 years (or longer as required by 40 C.F.R. § 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. This period may be extended by request of the Director 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 must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, 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 Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only 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 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 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 that are 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 Director 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 Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 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. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such 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 report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

(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 C.F.R. § 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 Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under 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 Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §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 non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. 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 Director. 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.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

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 under the CWA, 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 or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

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

"approved States," including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

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" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that 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.

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* 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.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

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) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a 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.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

Discharge Monitoring Report ("DMR") means the EPA uniform 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.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Director 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."

Environmental Protection Agency ("EPA") means the United States Environmental Protection

Agency.

Grab Sample means an individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

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

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) 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, 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 that is not a land application unit, surface impoundment, injection well, or waste pile.

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

LC_{50} means 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.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *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 tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *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.

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 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 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 Director 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 Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

Pass through means a Discharge (see definition above) 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).

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

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). "Permit" does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

Person means 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 measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

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 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (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 a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

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

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

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, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge 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 C.F.R. § 122.2.

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; finished materials such as metallic products; 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 Section 313 of title III of SARA; 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 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 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 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

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.

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 that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

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

Toxic pollutant 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 waste water 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 waste water 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 Director may designate any person subject to the standards for sewage sludge use and

disposal in 40 C.F.R. 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 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

Waters of the United States or waters of the U.S. 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 the 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 CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient 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.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous 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
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

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

FACT SHEET

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

NPDES PERMIT NUMBER: MA0040398

PUBLIC NOTICE START AND END DATES: March 18, 2026 – April 17, 2026

NAME AND MAILING ADDRESS OF APPLICANT:

Massachusetts Water Resources Authority (MWRA)
Deer Island Treatment Plant
33 Tafts Avenue
Boston, MA 02128

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

John J. Carroll Water Treatment Plant
84 D'Angelo Drive
Marlborough, MA 01752

RECEIVING WATER AND CLASSIFICATION:

Sudbury Reservoir (MA82106)
Concord River Watershed
Class A

SIC CODE: 4941 (Water Supply)

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1.0 Proposed Action

Massachusetts Water Resources Authority (MWRA) (the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to authorize pollutant discharges from John J Carroll Water Treatment Plant (the "Facility") into the Sudbury Reservoir via the Wachusett Aqueduct Open Canal.

The permit currently in effect was issued by EPA on October 2, 2019 with an effective date of January 1, 2020 and expired on December 31, 2024 (the "2019 Permit"). The Permittee filed an application seeking NPDES permit reissuance from EPA dated June 25, 2024, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on July 31, 2024, the Facility's 2019 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the Massachusetts Department of Environmental Protection (MassDEP or the "State") conducted a site visit on November 21, 2025.

2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. §§ 1251 – 1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except to the extent authorized under specific provisions of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" on the condition that the discharge will comply with the standards specified in certain other provisions of the statute (e.g., CWA §§ 301, 306 and 403). CWA § 402(a)(1). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Sections 301 and 402 of the CWA. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). Technology-based effluent limitations (TBELs) represent the minimum level of pollutant discharge control that must be satisfied under Sections 301(b) and 402(a)(1) of the CWA. *See also* 40 CFR § 125.3(a). When limits more stringent than technology-based limits are needed to maintain or achieve compliance with state water quality standards (WQS), then NPDES permit must include water quality-based effluent limits (QBELs). *See* CWA §§ 301(b)(1)(C) and 401; 40 CFR §§ 122.4(d), 122.44(d)(1) and (5), 124.53, and 124.55.

2.1 Technology-Based Requirements

NPDES permit limits must, at a minimum, satisfy applicable federal technology standards under the CWA. CWA §§ 301(b), 304(b) and 402(a); 40 CFR § 125.3(a). The statute specifies several different narrative technology standards that apply to different types of pollutants. Technology-based effluent limitations are set to reflect the greatest degree of pollution control that can be achieved by using a technology that satisfies the applicable technology standard. Effluent limitations based on the best practicable control technology currently available (BPT) standard apply to "conventional pollutants" under certain circumstances, while effluent limitations applied to conventional pollutants are otherwise based on the best conventional control technology standard (BCT). *See* CWA §§ 301(b)(2)(E) and 304(a)(4), (b)(1) and (b)(4). *See also* 40 CFR §§ 125.3(a)(2)(i) and (ii). Effluent limitations based on the best available technology economically achievable (BAT) apply to toxic and non-conventional pollutants. *See* CWA § 301(b)(1)(A) and (b)(2)(A) – (D) and (F), and 304(b)(2); 40 CFR §§ 125.3(a)(iii) and (iv); and 401.12. If a discharger is a "new source" under Section 306 of the CWA, 33 U.S.C. § 1316, however, then it must meet new source standards based on the "best available demonstrated technology" (BADT). *See also* 40 CFR §§ 122.2 (definition of "new source") and 122.29.

Subpart A of 40 CFR Part 125 establishes criteria and standards for developing and applying technology-based requirements in permits under § 301(b) and 402(a) of the CWA. Where EPA has established national effluent limitation guidelines (ELGs) for an industrial category or subcategory, permit *limits* for a facility within that category are set by applying the limits from the national guideline. 40 CFR § 125.3(c)(1). *See also* CWA § 402(a)(1)(A). Where EPA has not yet promulgated an applicable national ELG, then the permitting authority develops permit limits based on a facility-specific, Best Professional Judgment (BPJ) application of the relevant technology standard. 40 CFR § 125.3(c)(2). *See also* CWA § 402(a)(1)(B). Where national ELGs have been promulgated for some, but not all, of the pollutants regulated by the permit, limits are set using the appropriate approach for each pollutant. 40 CFR § 125.3(c)(3).

Discharges from facilities other than publicly owned sewage treatment plants must generally comply with technology standards as expeditiously as practicable but in no case later than either three years after the date such limitations are established or March 31, 1989, whichever comes first. *See* 40 CFR § 125.3(a)(2). NPDES permits may not include compliance schedules inconsistent with a CWA statutory compliance deadline. *See* 40 CFR§ 122.47(a)(1).

2.2 Water Quality-Based Requirements

The CWA and EPA regulations require that NPDES permits include effluent limits based on water quality considerations when such limits are necessary to meet state or federal WQS that apply to the body of water that receives the discharge. Such water quality-based limits are necessary when TBELs would be less stringent and would interfere with the attainment or maintenance of WQS in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

In the Draft Permit, EPA is proposing changes to previous water quality-based permit requirements to comport with the Supreme Court's decision in *City and County of San Francisco v. EPA*, No. 23-753 (S. Ct. Mar. 4, 2025). At issue in that case were two broad narrative provisions prohibiting discharges that cause or contribute to violations of applicable water quality standards. The Supreme Court's opinion refers to these narrative provisions as "end-result" requirements, explaining them as "permit provisions that do not spell out what a permittee must do or refrain from doing but instead make a permittee responsible for the quality of the water in the body of water into which the permittee discharges pollutants." *San Francisco v. EPA*, No. 23-753, *slip op.* at 2. The Supreme Court held that the Clean Water Act "does not authorize EPA to include 'end-result' provisions in NPDES permits." *Id.* At 20. Consistent with this holding in *San Francisco v. EPA*, EPA is not including language in the Draft Permit that is analogous to the permit text rejected by the Court (i.e., "The discharge shall not cause a violation of the water quality standards of the receiving water."). Specifically, these analogous requirements that have been removed in the Draft Permit are in Part I.A.2-8 of the 2019 Permit.

In the development of the Draft Permit, EPA conducted a thorough reasonable potential analysis on all pollutants of concern (*i.e.*, all pollutants identified in the past five years of monthly Discharge Monitoring Reports [DMRs] and in the most recent permit application) using all available information to ensure that all pollutants of concern were either already consistently below levels that may violate applicable water quality standards (WQS) or received a protective WQBEL in the permit if the data demonstrated the reasonable potential to cause or contribute to an excursion of WQS. Some of EPA's pollutant-specific reasonable potential calculations for specific pollutants of concern are shown in Appendix C of this Fact Sheet, though a reasonable potential analysis was conducted for all pollutants identified in the DMRs and/or permit application.

Based on this information, EPA has determined that the permit is fully protective of all applicable water quality standards based on all currently available information. The narrative water quality-based requirements in previous iterations of this permit (*e.g.*, "The discharge shall not cause a violation of the water quality standards of the receiving waters") were not in lieu of any more specific water quality requirements. To be clear, the Draft Permit without these generic narrative conditions is sufficiently stringent to ensure compliance with water quality standards under current conditions and their removal does not allow for any associated lowering of water quality in the effluent. Therefore, these conditions are not necessary given EPA's determination that the limits in this permit are sufficient to meet WQS, and thus they are not included in the Draft Permit as requirements based on CWA Section 301(b)(1)(C).[1]

2.2.1 Water Quality Standards

[1] Given that the removal of these provisions is not considered relaxation of the permit, this change is consistent with CWA § 402(o) and § 303(d)(4).

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the state. *See* CWA § 303 and 40 CFR §§ 131.10 - 131.12. Generally, WQSs 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) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. In this case, the applicable state WQSs are found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and particular numeric and narrative water quality criteria intended to help attain the designated uses. Then the state assigns one of the water body classifications to each water body in the state. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits.

When permit effluent limit(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," 2) based on a "case-by-case" assessment using CWA § 304(a) recommended water quality criteria supplemented as necessary by other relevant information; or 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A) – (C).

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high-quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts' statewide antidegradation policy, entitled "Antidegradation Provisions," is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedures for the

Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00," dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State's antidegradation requirements, including the protection of the existing uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of a pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C), and 40 CFR § 122.44(d)(1), NPDES permits must include any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. In addition, permit limits "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the

permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either 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 the State's WQSs, or the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State may provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law, including water quality standards.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit

limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

The draft state certification will also be made available for public comment[2] by the State separately from this Draft Permit as part of the permit reissuance process. EPA does not have authority to make changes to the state certification conditions. Any comments regarding the draft state certification conditions should be made directly to MassDEP as part of that separate public notice.

2.3 Effluent Flow Requirements

Generally, EPA uses a discharger's effluent flow volume both to determine whether a NPDES permit needs certain effluent limitations and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in its reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should a facility's effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (i.e., might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have a reasonable potential to do so at a higher flow due to the decreased dilution in the receiving water (which, conversely, means there will be a higher concentration of the pollutants). In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.[3] In this regard, the effluent flow limitation is a component of any WQBELs because the WQBELs are premised on a maximum flow level. The effluent flow limit may also be necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

Setting limits on effluent flow volumes is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with EPA's authorities under the CWA.

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[2] Once the public notice period for the MassDEP's draft 401 certification begins, it will be posted here: https://www.mass.gov/info-details/massdep-permits-approvals-for-comment. Following MassDEP's public notice period, the draft certification will be moved to here: https://www.mass.gov/info-details/massachusetts-draft-individual-surface-water-discharge-permits-and-associated-documents.

[3] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id.* 40 CFR §122.44(d)(1)(ii). *Both* the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010). EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. *See In re Washington Aqueduct Water Supply Sys.,* 11 E.A.D. 565, 584 (EAB 2004).

As provided in Part II.B.1 (Standard Conditions) of the proposed permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, an effluent flow limit is a permit condition that relates to the Permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 CFR Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(h), (j) and (1)(9), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numeric effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. *See* 40 CFR § 122.41(j)(4). Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[4] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as

[4] Fed. Reg. 49,001 (Aug. 19, 2014).

cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[5] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.[6]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Exceptions are provided in the permit such as for providing certain reports, information, and requests to EPA's NPDES Applications Coordinator in the Water Division and written notifications required under Part II Standard Conditions.

2.5 Standard Conditions

[5] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Fed. Reg. 49,001 (Aug. 19, 2014).

[6] https://netdmr.zendesk.com/hc/en-us

The Standard Conditions, included as Part II of the Draft Permit, are based on applicable regulations found in EPA's NPDES permitting regulations. *See* 40 CFR § 122.41. *See also, generally,* 40 CFR Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified with conditions less stringent than the corresponding conditions in a previous permit issued to the same facility unless doing so is authorized by one of the specified exceptions to the anti-backsliding requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(*l*). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or State certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2019 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Facility is located just South of the Wachusett Aqueduct Open Canal on D'Angelo Street in Marlborough, Massachusetts. A location map is provided in Figure 1. The main features of the Facility are a pump station for public water supply intake; the ozone building, which houses four ozone generators with accompanying contact chambers, an additional building which houses twelve ultraviolet (UV) disinfection units, and two underground storage tanks. A site plan is provided in Figure 2.

As there is no filtration, the primary mechanism for treatment is disinfection. The Facility employs three methods of disinfection: ozone, ultraviolet light (UV), and chloramines. The plant runs two parallel systems (A and B) that mirror each other for redundancy, the general process flow as follows:

Treatment chemical additions are as follows:

- 10% ozone by weight, added at a concentration between 1.5-4.0 mg/L for primary disinfection.
- Sodium bisulfite is added at 0-3.5 mg/L as water exits the ozone contact basins to remove residual ozone.

- Sodium hypochlorite is added at 3-4 mg/L followed by aqueous ammonia at 0.6-0.85 mg/L (typically at a 5:1 ratio of chlorine to ammonia) to form monochloramines for secondary disinfection.
- Hydrofluorosilicic acid is added at 0.7 mg/L for fluoridation.
- Sodium carbonate (soda ash) is added at 35-37 mg/L to raise the alkalinity to 40 mg/L and carbon dioxide is added at 4.5-8.5 mg/L to raise the pH to 9.5 for corrosion control.[7]

3.1.1 Effluent Limitation Guidelines

EPA has not promulgated technology-based effluent limitation guidelines (ELGs) for Water Supply (SIC 4941) in 40 CFR Subchapter N Parts 405 through 471. Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA may establish effluent limitations on a case-by-case basis using BPJ. EPA's NPDES permitting regulations at 40 CFR §125.3(c)(2) state that permits developed on a case-by-case basis under Section 402 (a)(1)(B) of the CWA shall apply the appropriate factors listed in 40 CFR § 125.3(d) and must consider 1) the appropriate technology for the category or class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant.

In addition to considering these factors, EPA's BPJ analysis has also been informed, to the extent relevant to the Facility, by the technology-based limitations and conditions in EPA Region 1's Dewatering and Remediation General Permit (MAG91000 and NHG91000) and Potable Water Treatment Facility General Permit (MAG640000 and NHG640000) (PWTFGP) for consistency with requirements imposed upon the majority of facilities in Massachusetts and New Hampshire with discharges of treated drinking water and drinking water treatment facility process waters. EPA also considered technology-based limitations and conditions included in individual permits issued to facilities in Region 1 that discharge drinking water or drinking water treatment facility process water.

3.2 Location and Type of Discharge

Outfall 001 is located at Latitude 42° 18' 44" Longitude 71° 34' 53" on the southern bank of the Wachusett Aqueduct Open Canal. The approximate linear distance measured from Outfall 001 to the storage tanks is 1,500 feet.

The Draft Permit authorizes 2 distinct discharges through Outfall 001 to Sudbury Reservoir via the Wachusett Aqueduct Open Canal: 1) dewatering wastewater, which consists of dechlorinated drinking water (drawdown and overflow); and 2) remediation wastewater, which consists of dechlorinated disinfection water (disinfection) and dechlorinated drinking water (flush water). Table 1 lists the types of discharge with the anticipated total volume from the 2 storage tanks.

[7] https://www.mwra.com/your-water-system/water-treatment-facilities/john-j-carroll-water-treatment-plant

Table 1: Discharges with Total Volume

Discharge	Description	Volume (MG)	Flow (MGD)
Dewatering	Draining the 2 storage tanks of treated drinking water and Overflow of treated drinking water	46 As needed	2.3 As needed
Remediation	Dechlorinated disinfection water	40	11.5
Remediation	Post disinfection flush water, dechlorinated drinking water	~40	22

The dewatering discharge associated with annual maintenance occurs over a 10-14 day period for the draining of one of the storage tanks. This is followed by several weeks of annual maintenance on the tank, once concluded, the tank is filled with disinfection water which is held for 24 hours. Filling and disinfection occurs over 2-3 days, during this period no discharges occur. The disinfection water is then discharged, as disinfection water is released, the flush water of dechlorinated drinking water is simultaneously added. The remediation discharge of disinfection water and post disinfection flush water occurs over 2-3 days. For one storage tank, there are roughly 12-17 days of discharges.

Dewatering (drawdown and overflow) and remediation (disinfection and flush) discharges are conveyed to Outfall 001 via a 120" pipe. During annual maintenance, solids from the bottom of the tanks are removed and sent to the Marlborough Sewage Treatment Plant. A schematic of water flow is provided in Figure 3.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee, including Discharge Monitoring Reports (DMRs), from January 2020 through September 2025, is provided in Appendix A of this Fact Sheet.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 001 via the Wachusett Aqueduct Open Canal to the Sudbury Reservoir (Segment ID MA82106), which consists of 1,181 acres in Southborough and Marlborough, Massachusetts. Sudbury Reservoir is part of the Concord River Watershed and serves as part of Massachusetts Water Resources Authority's backup drinking water supply for the metropolitan Boston area.

Sudbury Reservior is classified as Class A, Public Water Supply and Outstanding Resource Water in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (CMR) 4.06. Class A waters are described in the Commonwealth of Massachusetts Surface Water Quality Standards at 314 CMR 4.05(3)(a) as follows: *"as public water supplies…They are designated as excellent 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, even if not allowed.*

These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters."

Sudbury Reservoir is listed in the *Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle* ("303(d) List") as a Category 4a "TMDL is Completed."[8] Sudbury Reservoir was included in the Northeast Regional Mercury TMDL which was completed in 2007. The status of each designated use is presented in Table 2.

Table 2: Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Not Supporting
Aesthetics	Not Assessed
Primary Contact Recreation	Not Assessed
Secondary Contact Recreation	Not Assessed
Fish Consumption	Not Supporting

According to the *Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle*[7], this water body segment is not supporting designated uses for fish and other aquatic life and wildlife while designated uses for primary and secondary contact, and aesthetics have not been assessed. Additionally, Sudbury Reservoir is included in the Massachusetts Department of Public Health fish consumption advisory for mercury in all species.[9]

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the Facility that is referenced in this Fact Sheet can be found in Appendix B. Data collected by the Permittee includes monitoring for temperature, hardness, ammonia, and total recoverable copper and lead.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[10] The critical flow of the receiving water is the most severe hydrologic condition at which water quality criteria must be applied, as specified in State WQSs.

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[8] Final *Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle*. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; May 2023; CN: 568.1. Available at: https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-2022-reporting-cycle/download.

[9] Freshwater Fish Consumption Advisory List. Massachusetts Department of Public Health Bureau of Environmental Health; January, 2025. https://www.mass.gov/lists/fish-consumption-advisories

[10] EPA Permit Writer's Manual, Section 6.2.4

In this case, the State's WQS indicates that, *"the Department will establish extreme hydrologic conditions at which aquatic life criteria must be applied on a case-by-case basis. In all cases existing uses shall be protected and the selection shall not interfere with the attainment of designated uses"*. See 314 CMR 4.03(3)(c). The State determined that the dilution factor for the Facility is 10:1; which remains the same from the 2019 Permit. EPA used this dilution factor (DF) in its quantitative derivation of WQBELs for pollutants in the Draft Permit.

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which is discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

In accordance with 40 CFR § 122.45(b)(2), EPA based the calculation of effluent limitations upon a reasonable measure of actual production of the Facility, or flow. EPA determined that the measure appropriate for this Facility is the maximum capacity of the storage tanks, 25 MGD. The maximum capacity of the tanks reflects the magnitude, frequency, and duration of discharge generated during routine maintenance at the Facility.

5.1 Effluent Limitations and Monitoring Requirements

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were used during the effluent limitations development process. Discharge and ambient data are included in Appendix A and B. EPA's Reasonable Potential Analysis is included in Appendix C and results are discussed in the applicable sections below.

5.1.1 Effluent Flow

The Facility's 2019 Permit includes a reporting requirement for the average monthly flow and a maximum daily flow of 25 MGD. From January 2020 through September 2025 (Appendix A) effluent flow has ranged from 1 MGD to 22 MGD while discharging. Under normal operating conditions, and as indicated by monitoring data and information provided by the Permittee, the maximum flow is typically no greater than approximately 22 MGD. Therefore, the Draft Permit continues the maximum daily flow limit of 25 MGD and reporting requirement for the average monthly flow as well as daily monitoring for flow using a meter or estimate, when the Facility is discharging for both dewatering and remediation purposes.

5.1.2 pH

The hydrogen-ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while

those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Not only can sudden pH changes kill aquatic life, but pH can also affect the toxicity of other pollutants in the water.

From January 2020 through September 2025 (Appendix A), pH has ranged from 6.5 to 7.59 S.U. The Draft Permit requires a pH range of 6.5 to 8.3 S.U. when the Facility is discharging, monitored by grab samples once per discharge event for both dewatering and remediation discharges. The pH limitations are based on the State WQSs for Inland Water, Class A at 314 CMR 4.05(3)(a)3, which require that the pH of the receiving water be in the range of 6.5 to 8.3 S.U. These limitations are based on CWA § 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.3 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

The Facility's 2019 Permit included TSS limits of an average monthly of 30 mg/L and a daily maximum of 50 mg/L with sampling once per discharge event. There were no exceedances of the limits from January 2020 through September 2025 (Appendix A). The daily maximum total suspended solids (TSS) concentrations have ranged from 0 mg/L to 24 mg/L with a median value of 0 mg/L.

The TSS limits in the 2019 Permit were established using BPJ pursuant to CWA § 402(a)(1). The limitations are based upon the TSS concentrations estimated to be achievable by facilities discharging treated drinking water. Performance data from the Facility indicate that these TBELs are routinely achievable and no material or substantial changes in operations at the Facility have occurred since these limitations were imposed. Therefore, these limitations and monitoring requirements for the dewatering and remediation discharges have been continued from the Facility's 2019 Permit.

5.1.4 Temperature

Section 502(6) of the Clean Water Act defines heat as a "pollutant." *See* 33 U.S.C. § 1362(6). Water temperature affects the metabolic and reproductive activities of aquatic organisms and can determine which fish and macroinvertebrate species can survive or thrive in a water body. Certain cold-blooded species cannot regulate their body temperature through

physiological means, so their body temperatures reflect the temperatures of the water they inhabit. In addition, rapid changes (increases or decreases) in ambient water temperature can directly affect aquatic life, particularly fish. Ambient water temperature can indirectly affect aquatic life by influencing other water quality parameters such as dissolved oxygen, by which the solubility of oxygen decreases as water temperature increases.
Massachusetts has promulgated numeric water quality criteria for temperature, for Class A waters "The rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C)." *See* 314 CMR 4.05(3)(a)(2)(a). Additionally, in the development of the 2013 Permit, EPA and MassDEP, in consultation with Massachusetts Division of Fisheries and Wildlife (MassDFW) determined that a decrease in temperature less than 5°F below ambient conditions is protective of aquatic life for the Sudbury Reservoir.

From January 2020 to September 2025, discharge temperature ranged from 36.1° to 58.3° fahrenheit (Appendix A) and ambient temperatures measured in the Sudbury Reservoir ranged from 32.7° to 51.4° fahrenheit (Appendix B). The 2019 Permit required monitoring once per discharge event to determine if numeric effluent limitations for temperature were necessary to meet State WQSs. Utilizing the method in Attachment B of the Noncontact Cooling Water General Permit, EPA calculated the temperature change (ΔT) in the Sudbury Reservoir from the dewatering and remediation discharges (Appendix D). The ΔT ranged from -0.25° to +0.81° fahrenheit, which are within the State WQSs of -5.0° to 1.5° fahrenheit for Sudbury Reservoir. EPA has determined that the discharge meets State WQSs, as such, EPA has proposed discontinuing monitoring for temperature in the discharge or receiving water in the Draft Permit.

5.1.5 Total Residual Chlorine

Chlorine and chlorine compounds are toxic to aquatic life. Free chlorine is directly toxic to aquatic organisms and can react with naturally occurring organic compounds in receiving waters to form toxic compounds such as trihalomethane. Potable water sources are typically chlorinated 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 four hours.

As a discharger of treated drinking water, the 2019 Permit contained WQBELs of a monthly average of 110 µg/L and a daily maximum of 190 µg/L. From January 2020 to September 2025 (Appendix A), the total residual chlorine (TRC) ranged from 0 µg/L to 10 µg/L with a median of 0 µg/L. The WQBELs are based on the State WQSs for aquatic life criteria found at 314 CMR 4.06(6)(d) and EPA's *National Recommended Water Quality Criteria* for TRC which are as follows:

Freshwater acute (Class A or B) = 19 µg/L
Freshwater chronic (Class A or B) = 11 µg/L

Effluent limitations were calculated using the water quality criteria above and applying the available dilution for the discharge, according to the following equation:

Effluent Limit = (Dilution Factor) x (Water Quality Criteria)

Since the dilution factor is 10:1, the Draft Permit contains monthly average and daily maximum limitations of 110 µg/L and 190 µg/L, respectively. In accordance with anti-backsliding requirements, the Draft Permit continues the 2019 Permit limits of a monthly average of 110 µg/L and a daily maximum of 190 µg/L for both discharges to be sampled once per discharge event.

5.1.6 Ammonia

Ammonia (NH_3) is the unionized form of ammonia nitrogen. Elevated levels of ammonia can be toxic to aquatic life. Temperature and pH affect the toxicity of ammonia to aquatic life. The toxicity of ammonia increases as temperature increases and ammonia concentration and toxicity increase as pH increases. Ammonia can affect fish growth, gill condition, organ weights and hematocrit, and can result in excessive plant and algal growth that can cause eutrophication. Ammonia can also affect dissolved oxygen through nitrification, in which oxygen is consumed as ammonia is oxidized. Low oxygen levels can then, in turn, increase ammonia by inhibiting nitrification. Total ammonia-nitrogen concentrations in surface waters tends to be lower during summer than during winter due to uptake by plants and decreased ammonia solubility at higher temperatures.

Due to the use of aqueous ammonia for chloramination, the 2019 Permit contained a monitoring requirement for the daily maximum ammonia. From January 2020 to September 2025 (Appendix A), the ammonia levels ranged from 0.02 mg/L to 0.715 mg/L. EPA conducted a reasonable potential analysis (Appendix C) to determine if the ammonia levels cause/or have reasonable potential to cause, or contribute to an excursion above WQS. The acute and chronic EPA *National Recommended Water Quality Criteria* for ammonia, based on the maximum reported ambient temperature of 51.4°F (10.8°C) and the maximum permitted pH of 8.3 S.U., are as follows:

Freshwater acute (Class A or B) = 4.69 mg/L, salmonids absent
Freshwater chronic (Class A or B) = 0.881 mg/L, early life stages present

EPA found that the ammonia levels do not cause/or have reasonable potential to cause, or contribute an excursion above WQS. As such, the Draft Permit continues the 2019 Permit monitoring requirement of monitoring the daily maximum once per discharge event for both dewatering and remediation discharges.

5.1.7 Metals

Metals are naturally occurring constituents in the environment and generally vary in concentration according to local geology. Metals are neither created nor destroyed by biological or chemical processes. However, metals can be transformed through processes including adsorption, precipitation, co-precipitation, and complexation. Some metals are essential nutrients at low levels for humans, animals, plants and microorganisms, but toxic at higher levels (e.g., copper and zinc). Other metals have no known biological function (e.g., lead). The environmental chemistry of metals strongly influences their fate and transport in the environment and their effects on human and ecological receptors. In aquatic systems, metal bioavailability refers to the concentration of soluble metal that adsorb onto, or absorb into and across, membranes of living organisms. The greater the bioavailability, the greater the potential for bioaccumulation, leading to increased toxicological effects.[11] Toxicity results when metals are biologically available at toxic concentrations affecting the survival, reproduction and behavior of an organism.

The Permittee keeps copper sulfate, a common algaecide, onsite for use as needed to control levels of nuisance algae in the Wachusett Reservoir (i.e., the water supply treated at the Plant) that may impart a taste or odor to the water supply. Application of copper sulfate often occurs in June, but not necessarily in consecutive years, to control *Anabaena* blooms, a blue-green algae that imparts a musty or septic taste to water. Other treatments are used on an as-needed basis to control golden-brown algae, particularly *Synura*, which imparts a fishy taste to water. Copper sulfate may be applied at the surface or at a depth of up to 24 feet. Discharges from annual, reoccurring maintenance at the Facility typically do not occur during the time of year copper sulfate application in the Wachusett Reservoir typically occurs.

The 2019 Permit contained daily maximum monitoring requirements for total recoverable copper and lead, as hardness dependent metals, the 2019 Permit also included a daily maximum monitoring requirement for hardness for the dewatering discharge only. The 2019 fact sheet cites that the dewatering discharge contained the highest metals levels and reduced the monitoring requirement to once per year. From January 2020 to September 2025 (Appendix A), copper values ranged from 0.906 µg/L to 1.73 µg/L and lead values ranged from 0 µg/L to 0.125 µg/L. EPA conducted an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using EPA's 2002 *National Recommended Water Quality Criteria* for metals (Appendix C). The acute and chronic EPA *National Recommended Water Quality Criteria* for copper and lead are as follows:

Copper:
Freshwater acute (Class A or B) = 9.3 µg/L
Freshwater chronic (Class A or B) = 6.4 µg/L

Lead:
Freshwater acute (Class A or B) = 46.7 µg/L

[11] Magelhaes, Danielly et al. 2015. *Metal bioavailability and toxicity in freshwaters.* Environmental Chemistry Letters. DOI 10.1007/s10311-015-0491-9.

Freshwater chronic (Class A or B) = 1.8 µg/L

The results of EPA's analysis indicate discharges of copper and lead do not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit does not include effluent limitations for these metals. However, as copper and lead continue to be detected in the discharge, the Draft Permit continues the annual monitoring requirement for copper, lead, and hardness for the dewatering discharge only. Additionally, monitoring for copper is also required should copper sulfate be applied to Wachusett Reservoir within 30 days of discharge.

5.2 Special Conditions

5.2.1 Best Management Practices

Best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis to control or abate the discharge of pollutants when: 1) authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) authorized under CWA § 402(p) for the control of storm water discharges; 3) numeric effluent limitations are infeasible; or 4) the BMPs are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. *See* 40 CFR § 122.44(k).

In this case, pollutants may be present because they are generated during Facility operations, which could result in significant amounts of these pollutants reaching waters of the United States via discharges of wastewater. The Draft Permit requires the Permittee to develop, implement, and maintain a Best Management Practices (BMP) Plan for wastewater discharges from the Facility. The purpose of the BMP Plan is to document how the effluent limitations and requirements are being met to ensure that the wastewater discharged by the Facility is protective of the quality of the receiving water as a public water supply. These requirements are similar to those included in the Facility's 2019 Permit and, when appropriate for this Facility, are consistent with EPA's PWTFGP, effective October 1, 2023.

The Draft Permit specifies that the BMP Plan must include the following, at a minimum:

- Documentation of the selection, design, installation, implementation and maintenance of control measures necessary to meet the effluent limitations in this permit, including non-numeric effluent limitations. Any control measures shall be used in accordance with good engineering practices and manufacturer's specifications.
- A description of the pollution control equipment and procedures used to minimize the discharge to surface waters of suspended solids, floating solids, foam, visible oil sheen, and settleable solids, in order to comply with the permit requirements.
- Preventative maintenance procedures for the pollution control equipment to ensure

that equipment failures are avoided.

- A characterization of tank bottom residuals generated at the Facility, and how these residuals are generated, controlled.
- Procedures for handling Facility wastes, including schedules for removal, handling and disposal of materials, a description of where solids removed from the pollution control equipment or appurtenances, including sludge, are stored and/or disposed of, and the control measures used to prevent the removed solids from entering the receiving water. If Facility wastes are to be removed from the Facility, a description of the destination and method of disposal and/or reuse.
- A record of the following information for all additives and chemicals, (e.g., algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants):
    - Product name, chemical formula, and manufacturer of the additive/chemical
    - Purpose or use of the additive/chemical
    - Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each additive/chemical
    - The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the additive/chemical
    - If available, the vendor's reported aquatic toxicity (NOAEL and/or LC_{50} in percent for aquatic organism(s)).
- A description of the training to be provided for employees to assure they understand the goals, objectives, and procedures of the BMP Plan, the requirements of the NPDES Permit, and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit. Training should be conducted on an annual basis. Certification of such training should be recorded and kept on site, along with the BMP Plan certifications.
- Minimum documentation requirements as follows:
    - Records of operational and preventive maintenance activities
    - Records of the collection and analysis of samples, including, but not limited to sample location, any calculations done at the time of sampling, any sampling or analytical methods used for samples analyzed on site, and sample results so that an inspector may verify that the sampling was properly conducted.
    - All documentation of BMP Plan activities shall be kept at the Facility for at least three years from the date the document was generated and provided to EPA or MassDEP upon request.

The Draft Permit requires the Permittee to certify within ninety (90) days of the effective date of the permit that the BMP Plan has been completed, meets the requirements of the permit, and documents the control measures, including BMPs, that have been implemented to reduce or eliminate the discharge of pollutants from wastewater associated with Facility maintenance.

The Permittee must certify at least annually that the Facility has complied with the BMPs described in the BMP Plan, including inspections, maintenance, and training activities. The Permittee is required to amend and update the BMP Plan if any change occurs at the Facility affecting the BMP Plan, such as changes in the design, construction, operation, or maintenance of the Facility.

These requirements support, and are equally enforceable as, the numeric effluent limitations included in the Draft Permit. They have been selected on a case-by-case basis based on those appropriate for this specific facility. *See* CWA §§ 304(e) and 402(a)(1) and 40 C.F.R. § 122.44(k). These requirements will also ensure that discharges from the Facility will meet State WQSs pursuant to CWA § 301(b)(1)(C) and 40 C.F.R. 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs and the BMP Plan as the Permittee deems appropriate to meet the permit requirements.

5.2.2 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA. The following chemicals and additives were disclosed to EPA:

- Dechlorination – sodium bisulfate
- Disinfection – sodium hypochlorite, aqueous ammonia, ozone
- pH adjustment – sodium carbonate
- Fluoridation – hydrofluorosilicic acid

However, EPA recognizes that chemicals and additives in use at a Facility may change during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA in writing of the planned discharge of a new chemical or additive. Such notification allows for EPA review of the change. The Draft Permit specifies that for each chemical or additive, the Permittee must submit the following information, at a minimum, in writing to EPA:

- Product name, chemical formula, general description, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum application concentration), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for

aquatic organism(s)) for the chemical/additive.

The Permittee must also provide an explanation that demonstrates that the discharge of such chemical or additive: 1) will not add any pollutants in concentrations that exceed any permit effluent limitation; and 2) will not add any pollutants that would justify the application of permit conditions different from, or in addition to, those currently in this permit.

Assuming these requirements are met, discharges of a new chemical or additive is authorized under the permit upon notification to EPA unless otherwise notified by EPA.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding species of fish, wildlife, or plants that have been federally listed as endangered or threatened (listed species) and regarding habitat of such species that has been designated as critical (critical habitat).

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of Interior and the Secretary of Commerce, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for federally protected bird, terrestrial and freshwater species, while the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) administers Section 7 consultations for listed species of marine organisms (including marine mammals and reptiles), as well as for anadromous fish species.

The federal action being considered in this case is EPA's proposed reissuance of an NPDES permit for the John J Carroll Water Treatment Plant. The Draft Permit is intended to replace the 2019 Permit in governing the Facility. As the federal agency charged with authorizing the Facility's pollutant discharges, EPA assesses potential impacts to federally listed species and critical habitat and initiates consultation to the extent required under Section 7(a)(2) of the ESA.

EPA has researched whether federal endangered or threatened species of fish, wildlife, and plants are expected in the action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in the Sudbury Reservoir. There are no known federally listed threatened or endangered species or their critical habitat under the

jurisdiction of NOAA Fisheries within the vicinity of the Facility's discharge(s).[12] Therefore, ESA consultation with NOAA Fisheries is not required for this federal action.

For protected species under the jurisdiction of the USFWS, one listed endangered species, the northern long-eared bat (*Myotis septentrionalis*), was identified as potentially occurring in the action area of the Facility's discharge. According to the USFWS, the endangered northern long-eared bat is found in "winter – mines and caves, summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area overlaps with the general statewide range of the northern long-eared bat, EPA submitted an evaluation on potential effects of the project to the Information for Planning and Consultation (IPaC) system provided by the USFWS. Based on the information submitted by EPA, the USFWS IPaC generated a technical assistance letter, dated November 5, 2025, stating that the USFWS has determined that the Draft Permit will have "No Effect" on the northern long-eared bat.

The USFWS determination letter concluded EPA's consultation responsibilities for this permitting action under ESA Section 7(a)(2) with respect to the northern long-eared bat. No further ESA Section 7 consultation is required with USFWS. Therefore, the proposed permit action is deemed to have no impact on this listed species and ESA consultation with USFWS is not required for this discharge.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801, *et seq*., EPA is required to consult with NOAA Fisheries if proposed actions that EPA funds, permits, or undertakes, "may adversely impact any essential fish habitat." *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that 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.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 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.

[12] See [for USFWS at https://ecos.fws.gov/ipac/] and/or [for NMFS at https://www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html]

The Federal action being considered in this case is EPA's proposed NPDES permit for the John J Carroll Water Treatment Plant, which discharges though Outfall 001, via the Wachusett Aqueduct Open Canal to Sudbury Reservoir, MA82106, in Southborough and Marlborough, Massachusetts. Sudbury Reservoir is not covered by EFH designation for riverine systems at Latitude 42° 18' 44.7" Longitude 71° 34' 53.4", as determined by the NOAA EFH Mapper.[13] EPA's review of available EFH information indicated that the only EFH species that could possibly be present in the general vicinity of the Sudbury Reservoir is the Atlantic salmon *(Salmo salar).* However, EPA received guidance from NOAA Fisheries that the Sudbury Reservoir for the Facility is not listed as EFH for Atlantic salmon[14]. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is not required.

7.0 Public Comments, Hearing Requests, and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Corrie Houser at the following email address: houser.corrie@epa.gov.

Prior to the close of the public comment period, any person may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

If for any reason, comments on the Draft Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1437.

8.0 Administrative Record

[13] NOAA EFH Mapper available at https://www.habitat.noaa.gov/apps/efhmapper/.
[14] Correspondence from Michael R. Johnson, NMFS, to John H. Nagle, EPA Region 1, June 4, 2012.

The administrative record on which this Draft Permit is based may be accessed by contacting Corrie Houser at 617-918-1437 or via email to houser.corrie@epa.gov.

Date March 2026

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

Figure 1: Location Map

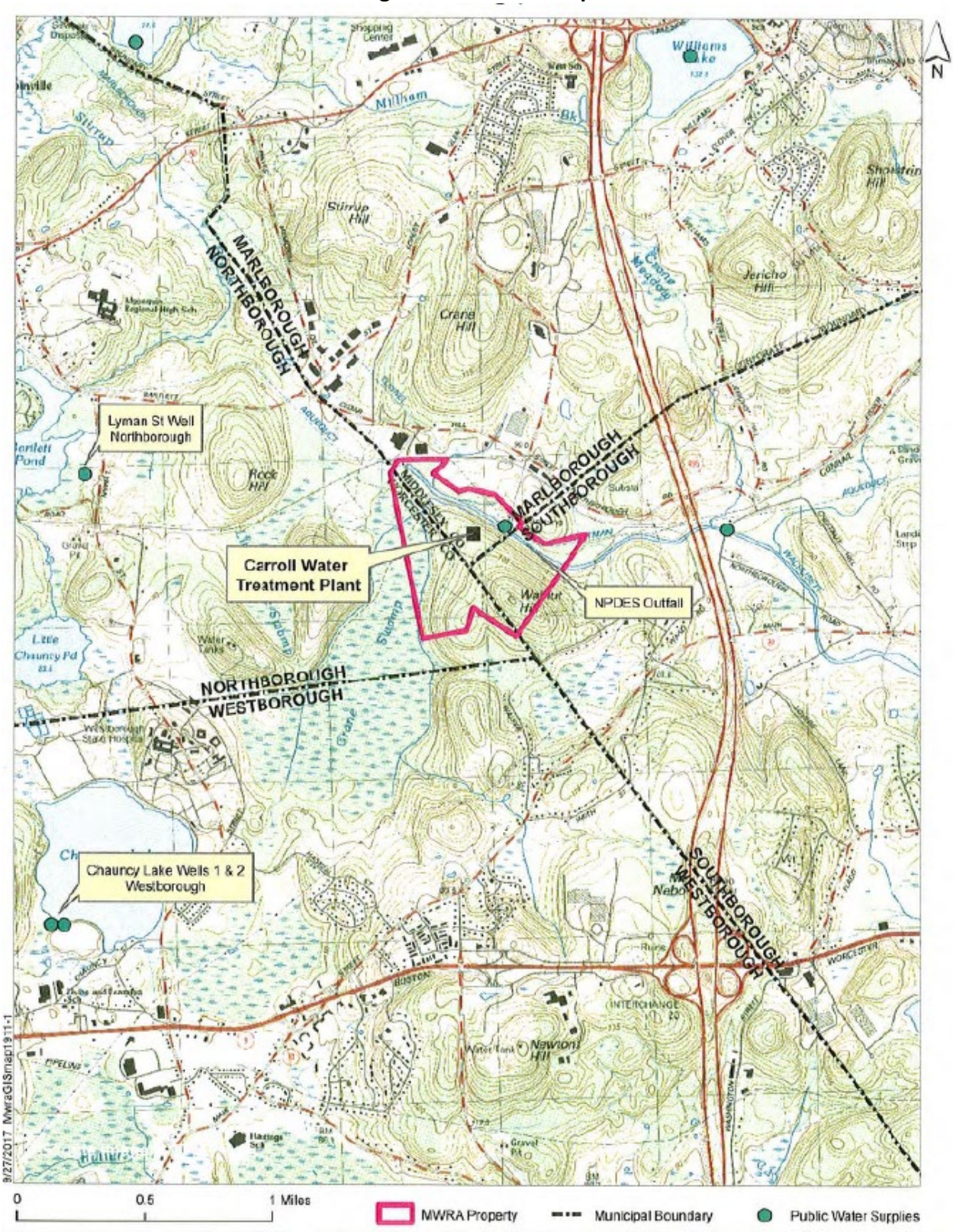
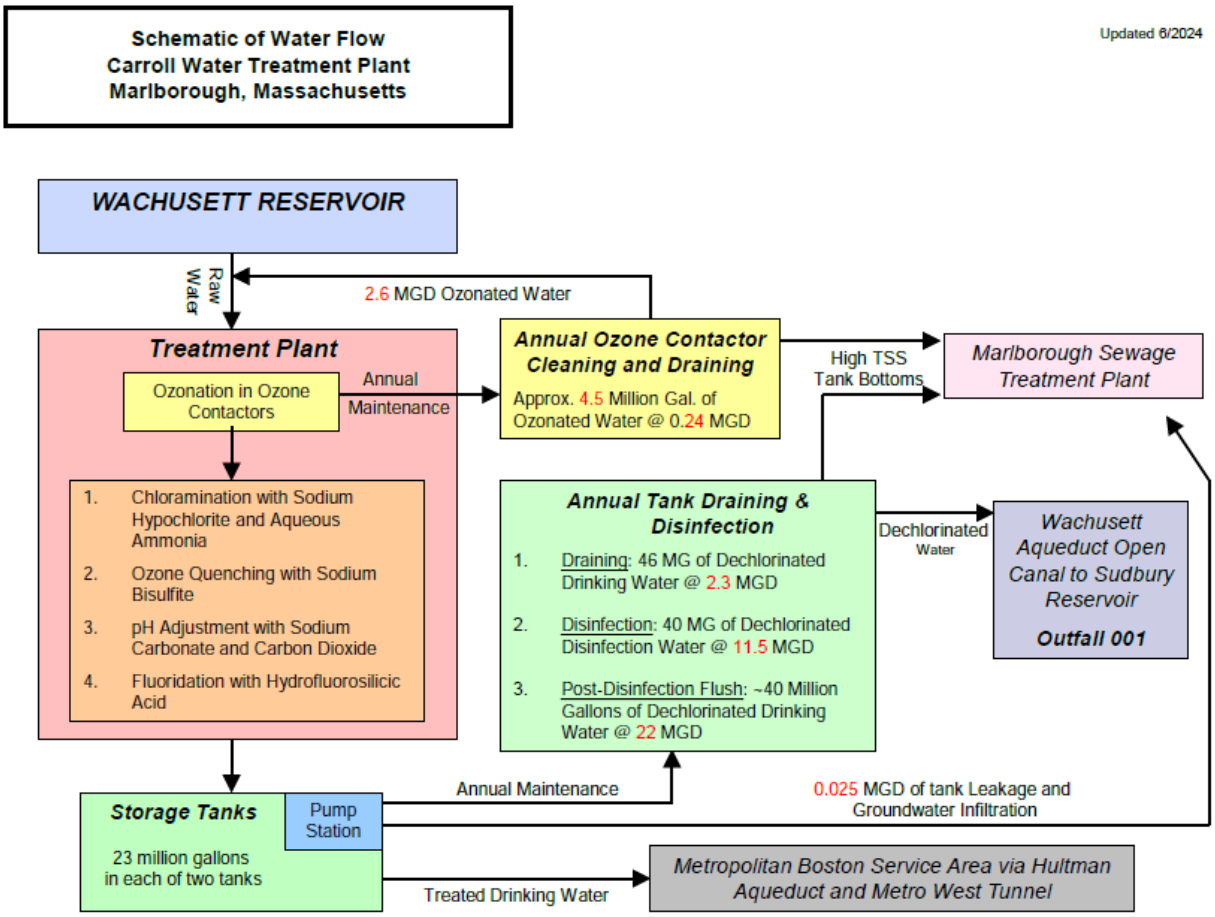


Figure 2: Site Plan

Figure 3: Schematic of Water Flow



Appendix A: Discharge Monitoring Data

John J Carroll Water Treatment Plant
Outfall Serial Number 001 - Dewatering Discharge
Monthly Effluent Monitoring

Parameter	Flow	Flow	TSS	TSS	pH	pH	TRC	TRC	Ammonia	Copper	Lead	Temperature	Temperature	Hardness
Units	**MGD**	**MGD**	**mg/L**	**mg/L**	**SU**	**SU**	**ug/L**	**ug/L**	**mg/L**	**ug/L**	**ug/L**	**deg F**	**deg F**	**mg/L**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Daily Max**	**Minimum**	**Maximum**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Monthly Avg**	**Daily Max**	**Daily Max**
Effluent Limitation	**Report**	**25**	**30**	**50**	**6.5**	**8.3**	**110**	**190**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**1**	**1**	**0**	**0**	**6.5**	**6.5**	**0**	**0**	**0.19**	**0.906**	**0**	**37.2**	**37.2**	**13.2**
Maximum	**18.6**	**18.6**	**24**	**24**	**7.4**	**7.4**	**0**	**0**	**0.715**	**1.73**	**0.125**	**56.5**	**58.3**	**16.8**
Average	**2**	**2**	**0**	**0**	**6.99**	**6.99**	**0**	**0**	**0.5**	**1.28**	**0**	**40.5**	**40.5**	**14.4**
No. of Violations	**N/A**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date														
1/31/2020	1	1	0	0	7.36	7.36	0	0	0.603	1.02	0	37.2	37.2	16.8
11/30/2020	2	2	0	0	6.8	6.8	0	0	0.522	1.73	0.125	56.5	56.5	16.6
1/31/2021	2	2	0	0	6.99	6.99	0	0	0.492	1.54	0.0976	40.5	40.5	15.1
11/30/2021	2	2	0	0	7.04	7.04	0	0	0.715	NODI: 9	NODI: 9	54.7	54.7	NODI: 9
1/31/2022	2	2	0	0	6.86	6.86	0	0	0.467	1.49	0	39.4	39.4	15.5
11/30/2022	2	2	0	0	6.9	6.9	0	0	0.5	1.53	0	56	58.3	13.9
1/31/2023	2	2	0	0	6.8	6.8	0	0	0.35	0.906	0.098	40.5	40.5	14.4
11/30/2023	1.9	1.9	24	24	6.5	6.5	0	0	0.19	NODI: 9	NODI: 9	50.9	50.9	NODI: 9
1/31/2024	2.1	2.1	0	0	7.15	7.15	0	0	0.53	1.58	0	39.2	39.2	14.6
10/31/2024	18.6	18.6	< 2	< 2	7.4	7.4	0	0	0.46	NODI: 9	NODI: 9	54.3	54.3	NODI: 9
1/31/2025	2.6	2.6	< 5	< 5	7.25	7.25	0	0	0.537	1.28	< .0938	37.4	37.4	13.2

Notes:
0 = parameter not detected
N/A = not applicable
NODI: 9 = No Data Indicator (NODI), Conditional Monitoring- Not Required This Period

John J Carroll Water Treatment Plant **Outfall Serial Number 001 – Remediation Discharge** **Monthly Effluent Monitoring**											
Parameter	**Flow**	**Flow**	**TSS**	**TSS**	**pH**	**pH**	**TRC**	**TRC**	**Ammonia**	**Temperature**	**Temperature**
Units	**MGD**	**MGD**	**mg/L**	**mg/L**	**SU**	**SU**	**ug/L**	**ug/L**	**mg/L**	**deg F**	**deg F**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Daily Max**	**Minimum**	**Maximum**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Monthly Avg**	**Daily Max**
Effluent Limitation	**Report**	**25**	**30**	**50**	**6.5**	**8.3**	**110**	**190**	**Report**	**Report**	**Report**
Minimum	**20**	**20**	**0**	**0**	**7.14**	**7.14**	**0**	**0**	**0.02**	**36.1**	**36.1**
Maximum	**22**	**22**	**0**	**0**	**7.59**	**7.59**	**10**	**10**	**0.293**	**45.9**	**45.9**
Average	**20**	**20**	**0**	**0**	**7.36**	**7.36**	**0**	**0**	**0.0746**	**39.9**	**39.9**
No. of Violations	**N/A**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date											
1/31/2020	22	22	0	0	7.46	7.46	0	0	0.0384	36.9	36.9
3/31/2020	20	20	0	0	7.41	7.41	0	0	0.0746	37.2	37.2
12/31/2020	20	20	0	0	7.43	7.43	0	0	0.293	43.2	43.2
3/31/2021	20	20	0	0	7.21	7.21	0	0	0.0308	36.1	36.1
12/31/2021	20	20	0	0	7.43	7.43	0	0	0.0727	44.1	44.1
2/28/2022	21	21	0	0	7.28	7.28	0	0	0.156	36.5	36.5
12/31/2022	20	20	0	0	7.24	7.24	10	10	0.1	45.3	45.3
2/28/2023	20	20	0	0	7.44	7.44	0	0	0.08	39.9	39.9
12/31/2023	20	20	0	0	7.14	7.14	10	10	0.02	45.9	45.9
2/29/2024	22	22	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2024	22	22	0	0	7.14	7.14	10	10	0.08	39.9	39.9
1/31/2025	21.5	21.5	< 5	< 5	7.59	7.59	0	0	0.106	37.4	37.4
3/31/2025	20	20	< 5	< 5	7.36	7.36	0	0	0.0389	41.4	41.4

Notes: 0 = parameter not detected, N/A = not applicable, NODI: 9 = No Data Indicator (NODI), Conditional Monitoring- Not Required This Period

Appendix B: Ambient Data

John J Carroll Water Treatment Plant
Sudbury Reservoir
Monthly Reporting – Dewatering Discharge

Monitoring Period End Date	Ammonia	Copper	Lead	Hardness	Temperature
	mg/L	ug/L	ug/L	mg/L	deg F
1/31/2020	0.0467	0	0	97.4	36
11/30/2020	0.0272	2.18	0.367	73.8	48.4
1/31/2021	0.0348	0.972	0.111	23.7	36.9
11/30/2021	0.0748	NODI: 9	NODI: 9	NODI: 9	47.8
1/31/2022	0.0391	1.4	0.188	75.6	37.9
11/30/2022	0.13	1.89	0.22	54.3	51.4
1/31/2023	0.09	0.862	0.148	70	36.9
11/30/2023	0.02	NODI: 9	NODI: 9	NODI: 9	45.7
1/31/2024	0.09	0.93	0	25	34.5
10/31/2024	0.04	NODI: 9	NODI: 9	NODI: 9	51.1
1/31/2025	0.114	NODI: 9	NODI: 9	NODI: 9	34.3

Notes:
0 = parameter not detected
NODI: 9 = No Data Indicator (NODI), Conditional Monitoring- Not Required This Period

John J Carroll Water Treatment Plant
Sudbury Reservoir
Monthly Reporting – Remediation Discharge

Monitoring Period End Date	Ammonia	Temperature
	mg/L	deg F
1/31/2020	0.0192	32.7
3/31/2020	0.0191	37.2
12/31/2020	0.0322	37.8
3/31/2021	0.0169	34.5
12/31/2021	0.025	37.9
2/28/2022	0.158	32.9
12/31/2022	0.02	37.8
2/28/2023	0.05	37.8
12/31/2023	0.03	44.4
2/29/2024	NODI: 9	NODI: 9
3/31/2024	0.04	37.6
1/31/2025	0.18	35.6
3/31/2025	0.0238	43.9

Notes:
0 = parameter not detected
NODI: 9 = No Data Indicator (NODI), Conditional Monitoring- Not Required This Period

Appendix C: Reasonable Potential Analysis

Methodology

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentrations that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of the *Technical Support Document for Water Quality-based Toxics Control* (TSD)[1] to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., sample results in which a parameter is not detected above laboratory minimum levels). EPA used this methodology to calculate the 95th percentile.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$Q_s C_s + Q_e C_e = Q_d C_d$$

Where:

C_d = downstream concentration
C_s = upstream concentration (median value of available ambient data)
C_e = effluent concentration (95th percentile of effluent concentrations)
Q_s = upstream flow
Q_e = effluent flow of the Facility (permitted maximum daily flow)
Q_d = downstream flow (Q_s + Q_e)

The receiving water is a reservoir and, as such, the ambient flow has not been measured. In order to determine the concentration downstream of the discharge, a receiving water flow that would result in the dilution factor (DF) approved by the State of 10:1 was substituted for Q_s. Solving for the receiving water concentration downstream of the discharge (C_d) yields:

$$C_d = \frac{C_s(DF - 1)Q_e + C_e Q_e}{Q_d}$$

[1] USEPA, *Technical Support Document for Water Quality-Based Toxics Control*, Office of Water, Washington, D.C., March 1991.

When the downstream concentration exceeds the applicable criterion there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration using the applicable criterion as the downstream concentration. The resulting effluent concentration then becomes the basis for the effluent limit. *See* 40 CFR § 122.44(d)(1)(iii).

Determination of Applicable Criteria

State water quality criteria are derived from EPA's *National Recommended Water Quality Criteria: 2002*, which are incorporated into the state WQSs by reference at 314 CMR 4.05(5)(e).

Freshwater aquatic life criteria for copper and lead are established in terms of dissolved metals and are converted to total recoverable using published conversion factors. Additionally, the criteria for copper and lead are hardness-dependent. EPA calculated hardness-dependent chronic and acute criteria for metals detected in the effluent using the downstream hardness determined using the hardness values measured in the Facility's discharge (Appendix A) and the median hardness value measured in the receiving water (Appendix B). Freshwater aquatic life criteria for ammonia are temperature and pH dependent. The applicable criteria are summarized in the table below.

Summary of Applicable Criteria

Parameter	Coefficients				Applicable Criteria[1,2,3,4,5]	
	ma	ba	mc	bc	Acute Criteria (CMC)	Chronic Criteria (CCC)
Units	—	—	—	—	**µg/L**	**µg/L**
Copper	0.9422	-1.7000	0.8545	-1.702	9.3	6.4
Lead	1.273	-1.460	1.273	-4.705	46.7	1.8
Ammonia	—	—	—	—	4694	881

[1]Acute Criteria (Criterion Maximum Concentration (CMC)) = $\exp\{m_a*\ln(\text{hardness})+b_a\}$ where:

m_a = pollutant-specific coefficient
b_a = pollutant-specific coefficient
ln = natural logarithm
h = hardness of the receiving water

[2]Chronic Criteria (Criterion Continuous Concentration (CCC)) = $\exp\{m_c*\ln(\text{hardness})+b_c\}$where:

m_c = pollutant-specific coefficient
b_c = pollutant-specific coefficient
ln = natural logarithm
h = hardness of the receiving water

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

[4]For dissolved to total recoverable metal conversion, see *Appendix A - Conversion Factors for Dissolved Metals:*
http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa; Required by 314 CMR 4.05(5)(e).

Calculation of Reasonable Potential

EPA first calculated the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations, the median value of the available ambient data, the permitted daily maximum effluent flow and the upstream 7Q10 flow to project the in-stream concentration downstream from the discharge. When this resultant in-stream concentration (C) exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. The results are summarized in the table below.

Summary of Reasonable Potential Results

Parameter	Effluent Flow	Effluent Conc[1]	Upstream Flow	Upstream Conc[2]	Downstream Flow[3]	Downstream Concentration	Acute Criterion	Chronic Criterion	Acute Reasonable Potential[4]	Chronic Reasonable Potential[5]
Units	**MGD**	**µg/L**	**MGD**	**µg/L**	**MGD**	**µg/L**	**µg/L**	**µg/L**	**—**	**—**
Copper	25	1.730	225	0.972	250	1.048	9.3	6.4	N	N
Lead		0.125		0.148		0.146	46.7	1.8	N	N
Ammonia		800		46.7		124	34700	5000	N	N

[1] Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A).
[2] Median upstream values calculated using monitoring data for the receiving water immediately upstream of the Facility's discharge reported by the Facility (see Appendix B).
[3] Value calculated as the sum of effluent flow and upstream flow.
[4] "Y" is indicated if downstream concentration exceeds the acute criterion.
[5] "Y" is indicated if downstream concentration exceeds the chronic criterion.

No parameters have a reasonable potential to cause or contribute to an excursion above water quality standards.

Appendix D: Temperature Change Analysis

Methodology

A temperature change analysis is used to determine the final temperature of the receiving water after the addition of the effluent discharge to ensure that the discharge will not cause or contribute to a violation of the allowable water body temperature change. To calculate the temperature change (ΔT), the following equation for heat capacity is used:

$$Q_{Plant} = C_p m_p \Delta T_p$$

$$Q_R = C_p m_r \Delta T_r$$

Where:

Q_{Plant} = heat load discharged from facility (btu)
Q_R = heat load transferred to the receiving waterbody (btu)
C_p = heat capacity of water = 1.0 °F x btu/lb
m_p = mass of effluent, lbs (gal. or cfs if volume is used)
ΔT_p = change in temperature, effluent – influent, °F
m_r = mass of receiving water, lbs (gal. or cfs if volume is used)
ΔT_r = change in receiving water temperature, °F

It is assumed that volume change with temperature will be negligible for the expected temperature range, thus volumes are used in place of the discharge and receiving waterbody masses. Additionally, it is assumed that the heat discharged by the facility is entirely transferred to the receiving waterbody, meaning the effluent and the receiving water will reach the same final temperature T_F (in °F). Therefore, ΔT_P and ΔT_R are based on this final temperature:

$$\boldsymbol{\Delta T_p = T_p - T_F}$$

$$\boldsymbol{\Delta T_r = T_F - T_r}$$

Since effluent and receiving water will reach the same final temperature $Q_{Plant} = Q_R$, giving the following:

$$\boldsymbol{C_p m_p \Delta T_p = C_p m_r \Delta T_r}$$

Substituting the temperature change in effluent and receiving water for the equations based on final temperature gives the following:

$$\boldsymbol{m_p(T_p - T_F) = m_r(T_F - T_r)}$$

Solving for T_F gives:

$$\boldsymbol{T_F = \frac{m_p T_p + m_r T_r}{m_p + m_r}}$$

Calculation of Temperature Change

EPA first calculated the final temperature of the effluent and receiving water using the DMR data for daily maximum discharge temperature, daily maximum receiving water temperature, and discharge flow. The dilution factor of 10:1 was used to calculate the receiving waterbody flow. The final temperature was then used to calculate the change in receiving water temperature, a violation of water quality standards occurs when the change in receiving water temperature is greater than +1.5 °F or -5.0 °F. The results are summarized in the table below.

Summary of Temperature Change Results- Dewatering Discharges

Effluent Flow (m_p) MGD	Effluent Temp (T_p) °F	Reservoir Flow (m_r) MGD	Reservoir Temp (T_r) °F	Final Temp (T_F) °F	Change in Temp (ΔT_r) °F
1	37.2	9	36	36.12	0.12
2	56.5	18	48.4	49.21	0.81
2	40.5	18	36.9	37.26	0.36
2	54.7	18	47.8	48.49	0.69
2	39.4	18	37.9	38.05	0.15
2	58.3	18	51.4	52.09	0.69
2	40.5	18	36.9	37.26	0.36
1.9	50.9	17.1	45.7	46.22	0.52
2.1	39.2	18.9	34.5	34.97	0.47
18.6	54.3	167.4	51.1	51.42	0.32
2.6	37.4	23.4	34.3	34.61	0.31

Summary of Temperature Change Results- Remediation Discharges

Effluent Flow (m_p) MGD	Effluent Temp (T_p) °F	Reservoir Flow (m_r) MGD	Reservoir Temp (T_r) °F	Final Temp (T_F) °F	Change in Temp (ΔT_r) °F
22	36.9	198	32.7	33.12	0.42
20	37.2	180	37.2	37.2	0
20	43.2	180	37.8	38.34	0.54
20	36.1	180	34.5	34.66	0.16
20	44.1	180	37.9	38.52	0.62
21	36.5	189	32.9	33.26	0.36
20	45.3	180	37.8	38.55	0.75
20	39.9	180	37.8	38.01	0.21
20	45.9	180	44.4	44.55	0.15
22	39.9	198	37.6	37.83	0.23
21.5	37.4	193.5	35.6	35.78	0.18
20	41.4	180	43.9	43.65	-0.25

None of the discharges caused a violation of the allowable water body temperature change.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED.

PUBLIC NOTICE PERIOD: March 18, 2026 – April 17, 2026

PERMIT NUMBER: MA0040398

NAME AND MAILING ADDRESS OF APPLICANT:

Massachusetts Water Resources Authority (MWRA)
Deer Island Treatment Plant
33 Tafts Avenue
Boston, MA 02128

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

John J. Carroll Water Treatment Plant
84 D'Angelo Drive
Marlborough, MA 01752

RECEIVING WATER AND CLASSIFICATION:

Sudbury Reservoir (Class A)

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the John J Carroll Water Treatment Plant, which discharges dechlorinated drinking water. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice their CWA § 401 certification and a separate state Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits or by contacting:

Corrie Houser
Telephone: (617) 918-1437
Email: houser.corrie@epa.gov

Any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by April 17, 2026**,** which is the close of the public comment period. Comments should be submitted to the EPA contact at the email listed above. If you prefer to submit comments by mail, please call or email the EPA contact above to make arrangements for that. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (*i.e.*, the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if 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.

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 notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. EPA – REGION 1