



MUNICIPAL NPDES PERMIT

issued to

Permittee:

Town of East Haddam
Seven Main Street
East Haddam, Connecticut 06423

Location Address:

Lumberyard Road
East Haddam, Connecticut 06423

Facility ID: 041-001

Permit ID: CT0101761

Permit Expires: September 3, 2018

Receiving Stream: Connecticut River

Design Flow Rate: 55,000 gallons per day

SECTION 1: GENERAL PROVISIONS

- (A) This permit is issued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and Section 402(b) of the Clean Water Act, as amended, 33 USC 1251, *et. seq.*, and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer a N.P.D.E.S. permit program.
- (B) The Town of East Haddam, ("permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to Section 22a-430 of the CGS and are hereby incorporated into this permit. **Your attention is especially drawn** to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) of Section 22a-430-3. To the extent this permit imposes conditions more stringent than those found in the regulations, this permit shall apply.

Section 22a-430-3 General Conditions

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

Section 22a-430-4 Procedures and Criteria

- (a) Duty to Apply
- (b) Duty to Reapply
- (c) Application Requirements
- (d) Preliminary Review
- (e) Tentative Determination
- (f) Draft Permits, Fact Sheets
- (g) Public Notice, Notice of Hearing

- (h) Public Comments
- (i) Final Determination
- (j) Public Hearings
- (k) Submission of Plans and Specifications. Approval.
- (l) Establishing Effluent Limitations and Conditions
- (m) Case-by-Case Determinations
- (n) Permit Issuance or Renewal
- (o) Permit or Application Transfer
- (p) Permit Revocation, Denial or Modification
- (q) Variances
- (r) Secondary Treatment Requirements
- (s) Treatment Requirements
- (t) Discharges to POTWs - Prohibitions

- (C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.
- (D) Any false statement in any information submitted pursuant to this Section of the permit may be punishable as a criminal offense under Section 22a-438 or 22a-131a of the CGS or in accordance with Section 22a-6, under Section 53a-157b of the CGS.
- (E) The permittee shall comply with Section 22a-416-1 through Section 22a-416-10 of the RCSA concerning operator certification.
- (F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the permittee pursuant to this permit will result in compliance or prevent or abate pollution.
- (G) Nothing in this permit shall relieve the permittee of other obligations under applicable federal, state and local law.
- (H) An annual fee shall be paid for each year this permit is in effect as set forth in Section 22a-430-7 of the RCSA. As of October 1, 2009 the annual fee is \$ 1722.50.

SECTION 2: DEFINITIONS

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

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

"-----" in the limits column on the monitoring tables in Attachment 1 means a limit is not specified but a value must be reported on the DMR, MOR, and/or the ATMR.

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

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

"Bi-Weekly" in the context of any sampling frequency, shall mean once every two weeks.

"Composite" or "(C)" means a sample consisting of a minimum of eight aliquot samples collected at equal intervals of no less than 30 minutes and no more than 60 minutes and combined proportionally to flow over the sampling period provided that during the sampling period the peak hourly flow is experienced.

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

"Daily Composite" or "(DC)" means a composite sample taken over a full operating day consisting of grab samples collected at equal intervals of no more than sixty (60) minutes and combined proportionally to flow; or, a composite sample continuously collected over a full operating day proportionally to flow.

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

sample results defining a grab sample average.

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

"Geometric Mean" is the "n"th root of the product of "n" observations.

"Infiltration" means water other than wastewater that enters a sewer system (including sewer system and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

"Inflow" means water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from, infiltration.

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

"In-stream Waste Concentration" or "(IWC)" means the concentration of a discharge in the receiving water after mixing has occurred in the allocated zone of influence.

"MGD" means million gallons per day.

"Maximum Daily Limit" means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g. mg/l), otherwise, it means the maximum allowable "Daily Quantity" as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity it means "Maximum Daily Flow" as defined in Section 22a-430-3(a) of the RCSA.

"Monthly Minimum Removal Efficiency" means the minimum reduction in the pollutant parameter specified when the effluent average monthly concentration for that parameter is compared to the influent average monthly concentration.

"NA" as a Monitoring Table abbreviation means "not applicable".

"NR" as a Monitoring Table abbreviation means "not required".

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

"Quarterly" in the context of any sampling frequency, shall mean sampling is required in the months of February, May, August and November.

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

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

"Sanitary Sewage" means wastewaters from residential, commercial and industrial sources introduced by direct connection to the sewerage collection system tributary to the treatment works including non-excessive inflow/infiltration sources.

"Semi-Annual" in the context of any sampling frequency, shall mean the sample must be collected in the months of February, and August.

"Twice per Month" in the context of any sampling frequency, mean two samples per calendar month collected no less than 12 days apart.

"ug/l" means micrograms per liter

"Work Day" in the context of a sampling frequency means, Monday through Friday excluding holidays.

SECTION 3: COMMISSIONER'S DECISION

- (A) The Commissioner of Energy and Environmental Protection ("Commissioner") has issued a final decision and found continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's decision is based on application #201000819 for permit reissuance received on February 11, 2010 and the administrative record established in the processing of that application.
- (B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or his authorized agent for the discharges and/or activities authorized by, or associated with, this permit.
- (C) The Commissioner reserves the right to make appropriate revisions to the permit, if required after Public Notice, in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

SECTION 4: GENERAL LIMITATIONS AND OTHER CONDITIONS

- (A) The Permittee shall not accept any new sources of non-domestic wastewater conveyed to its POTW through its sanitary sewerage system or by any means other than its sanitary sewage system unless the generator of such wastewater; (a) is authorized by a permit issued by the Commissioner under Section 22a-430 CGS (individual permit), or, (b) is authorized under Section 22a-430b (general permit), or, (c) has been issued an emergency or temporary authorization by the Commissioner under Section 22a-6k. All such non-domestic wastewaters shall be processed by the POTW via receiving facilities at a location and in a manner prescribed by the permittee which are designed to contain and control any unplanned releases.
- (B) No new discharge of domestic sewage from a single source to the POTW in excess of 2,750 gallons per day shall be allowed by the permittee until the permittee has notified in writing the Municipal Facilities Section of said new discharge.
- (C) The permittee shall maintain a system of user charges based on actual use sufficient to operate and maintain the POTW (including the collection system) and replace critical components.
- (D) The permittee shall maintain a sewer use ordinance that is consistent with the Model Sewer Ordinance for Connecticut Municipalities prepared by the Department of Energy and Environmental Protection. The Commissioner of Energy and Environmental Protection alone may authorize certain discharges which may not conform to the Model Sewer Ordinance.
- (E) No discharge shall contain or cause in the receiving stream a visible oil sheen, floating solids, visible discoloration, or foaming.
- (F) No discharge shall cause acute or chronic toxicity in the receiving water body beyond any Zone Of Influence (ZOI) specifically allocated to that discharge in this permit.
- (G) The permittee shall maintain an alternate power source adequate to provide full operation of all pump stations in the sewerage collection system and to provide a minimum of primary treatment and disinfection at the water pollution control facility to insure that no discharge of untreated wastewater will occur during a failure of a primary power source.
- (H) The average monthly effluent concentration shall not exceed 15% of the average monthly influent concentration for BOD₅ and Total Suspended Solids for all daily composite samples taken in any calendar month.
- (I) Any new or increased amount of sanitary sewage discharge to the sewer system is prohibited where it will cause a dry weather overflow or exacerbate an existing dry weather overflow.
- (J) Sludge Conditions
 - (1) The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including but not limited to 40 CFR Part 503.
 - (2) If an applicable management practice or numerical limitation for pollutants in sewage sludge more stringent than existing federal and state regulations is promulgated under Section 405(d) of the Clean Water Act (CWA), this permit shall be modified or revoked and reissued to conform to the promulgated regulations.
 - (3) The permittee shall give prior notice to the Commissioner of any change(s) planned in the permittees' sludge use or disposal practice. A change in the permittees' sludge use or disposal practice may be a cause for modification of the permit.

- (4) Testing for inorganic pollutants shall follow "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 as updated and/or revised.
- (K) This permit becomes effective on the 1st day of the month following the date of signature.
- (L) When the arithmetic mean of the average daily flow from the POTW for the previous 180 days exceeds 90% of the design flow rate, the permittee shall develop and submit within one year, for the review and approval of the Commissioner, a plan to accommodate future increases in flow to the plant. This plan shall include a schedule for completing any recommended improvements and a plan for financing the improvements.
- (M) When the arithmetic mean of the average daily BOD₅ or TSS loading into the POTW for the previous 180 days exceeds 90% of the design load rate, the permittee shall develop and submit for the review of the Commissioner within one year, a plan to accommodate future increases in load to the plant. This plan shall include a schedule for completing any recommended improvements and a plan for financing the improvements.
- (N) On or before July 31st of each calendar year the main flow meter shall be calibrated by an independent contractor in accordance with the manufacturer's specifications. The actual record of the calibration shall be retained onsite and, upon request, the permittee shall submit to the Commissioner a copy of that record.
- (O) The permittee shall operate and maintain all processes as installed in accordance with the approved plans and specifications and as outlined in the associated operation and maintenance manual. This includes but is not limited to all preliminary treatment processes, primary treatment processes, recycle pumping processes, anaerobic treatment processes, anoxic treatment processes, aerobic treatment processes, flocculation processes, effluent filtration processes or any other processes necessary for the optimal removal of pollutants. The permittee shall not bypass or fail to operate any of the aforementioned processes without the written approval of the Commissioner.
- (P) The temperature of any discharge shall not increase the temperature of the receiving stream above 85°F, or, in any case, raise the normal temperature of the receiving stream more than 4°F.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- (A) The discharge(s) shall not exceed and shall otherwise conform to the specific terms and conditions listed in this permit. The discharge is restricted by, and shall be monitored in accordance with Tables A through F incorporated in this permit as Attachment 1.
- (B) The Permittee shall monitor the performance of the treatment process in accordance with the Monthly Operating Report (MOR) incorporated in this permit as Attachment 2.

SECTION 6: SAMPLE COLLECTION, HANDLING and ANALYTICAL TECHNIQUES

- (A) Chemical Analysis
- (1) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall be performed using the methods approved pursuant to the Code of Federal Regulations, Part 136 of Title 40 (40 CFR 136) unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in Section 22a-430-3-(j)(7) of the RCSA. Chemicals which do not have methods of analysis defined in 40 CFR 136 or the RCSA shall be analyzed in accordance with methods specified in this permit.
 - (2) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal, as defined in 40 CFR 136 unless otherwise specified.
 - (3) Grab samples shall be taken during the period of the day when the peak hourly flow is normally experienced.
 - (4) Samples collected for bacteriological examination shall be collected between the hours of 11 a.m. and 3 p.m. or at that time of day when the peak hourly flow is normally experienced. A chlorine residual sample must be taken at the same time and the results recorded.
 - (5) The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in Attachment 1, Table C. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.

<u>Parameter</u>	<u>Minimum Level</u>
Arsenic, Total	0.005 mg/l
Mercury, Total	0.0002 mg/l

- (6) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this Section of the permit.
- (7) Effluent analyses for which quantification was verified during the analysis at or below the minimum levels specified in this Section and which indicate that a parameter was not detected shall be reported as "less than x" where 'x' is the numerical value equivalent to the analytical method detection limit for that analysis.
- (8) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.

(B) Acute Aquatic Toxicity Test

- (1) Samples for monitoring of Acute Aquatic Toxicity shall be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012).
 - (a) Composite samples shall be chilled as they are collected. Grab samples shall be chilled immediately following collection. Samples shall be held at 0 - 6°C until Acute Aquatic Toxicity testing is initiated.
 - (b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility. Facilities with effluent dechlorination and/or filtration designed as part of the treatment process are not required to obtain approval from the Commissioner.
 - (c) Samples shall be taken at the final effluent for Acute Aquatic Toxicity unless otherwise approved in writing by the Commissioner for monitoring at this facility.
 - (d) Chemical analyses of the parameters identified in Attachment 1, Table C shall be conducted on an aliquot of the same sample tested for Acute Aquatic Toxicity.
 - (i) At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine shall be measured in the effluent sample and, during Acute Aquatic Toxicity tests, in the highest concentration of the test and in the dilution (control) water at the beginning of the test and at test termination. If total residual chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination.
 - (e) Tests for Acute Aquatic Toxicity shall be initiated within 36 hours of sample collection.
- (2) Monitoring for Acute Aquatic Toxicity to determine compliance with the permit condition on Acute Aquatic Toxicity (invertebrate) shall be conducted for 48 hours utilizing neonatal (less than 24 hours old) *Daphnia pulex*.
- (3) Monitoring for Acute Aquatic Toxicity to determine compliance with the permit condition on Acute Aquatic Toxicity (vertebrate) shall be conducted for 48 hours utilizing larval (1 to 14-day old with no more than 24 hours range in age) *Pimephales promelas*.
- (4) Tests for Acute Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for measuring the Acute Aquatic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.
 - (a) For Acute Aquatic Toxicity limits, and for monitoring only conditions, expressed as a NOAEL value, Pass/Fail (single concentration) tests shall be conducted at a specified Critical Test Concentration (CTC) equal to the Aquatic Toxicity limit, (100% in the case of monitoring only conditions), as prescribed in Section 22a-430-3(j)(7)(A)(i) of the RCSA.
 - (b) Organisms shall not be fed during the tests.
 - (c) Synthetic freshwater prepared with deionized water adjusted to a hardness of 50±5 mg/L as CaCO₃ shall be used as dilution water in the tests.
 - (d) Copper nitrate shall be used as the reference toxicant.

- (5) For monitoring only conditions, toxicity shall be demonstrated when the results of a valid pass/fail Acute Aquatic Toxicity indicates less than 90% survival in the effluent at the CTC (100%).

SECTION 7: RECORDING AND REPORTING REQUIREMENTS

- (A) The results of chemical analyses and any aquatic toxicity test required above in Section 5 and the referenced Attachment 1 shall be entered on the Discharge Monitoring Report (DMR) and reported to the Bureau of Water Protection and Land Reuse. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR must be received at the following address by the 15th day of the month following the month in which samples are collected.

ATTN: Municipal Wastewater Monitoring Coordinator
Connecticut Department of Energy and Environmental Protection
Bureau of Water Protection and Land Reuse, Planning and Standards Division
79 Elm Street
Hartford, Connecticut 06106-5127

- (1) For composite samples, from other than automatic samplers, the instantaneous flow and the time of each aliquot sample collection shall be recorded and maintained at the POTW.
- (B) Complete and accurate test data, including percent survival of test organisms in each replicate test chamber, LC₅₀ values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the address specified above in Section 7 (A) of this permit by the 15th day of the month following the month in which samples are collected.
- (C) The results of the process monitoring required above in Section 5 shall be entered on the Monthly Operating Report (MOR) form, included herein as Attachment 2, and reported to the Bureau of Water Protection and Land Reuse. The MOR report shall also be accompanied by a detailed explanation of any violations of the limitations specified. The MOR, must be received at the address specified above in Section 7 (A) of this permit by the 15th day of the month following the month in which the data and samples are collected.
- (D) NetDMR Reporting Requirements
- (1) Unless otherwise approved in writing by the Commissioner, no later than one-hundred and twenty (120) days after the issuance of this permit, the Permittee shall begin reporting to the Department electronically using NetDMR, a web-based tool that allows Permittees to electronically submit discharge monitoring reports (DMRs) and other required reports through a secure internet connection. Specific requirements regarding subscription to NetDMR and submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

(a) NetDMR Subscriber Agreement

On or before fifteen (15) days after the issuance of this permit, the Permittee and/or the person authorized to sign the Permittee's discharge monitoring reports ("Signatory Authority") as described in RCSA Section 22a-430-3(b)(2) shall contact the Department and initiate the subscription process for electronic submission of Discharge Monitoring Report (DMR) information. On or before ninety (90) days after issuance of this permit the Permittee shall submit a signed and notarized copy of the *Connecticut DEP NetDMR Subscriber Agreement* to the Department.

(b) Submittal of Reports Using NetDMR

Unless otherwise approved by the Commissioner, on or before one-hundred and twenty (120) days after issuance of this permit, the Permittee and/or the Signatory Authority shall electronically submit DMRs and reports required under this permit to the Department using NetDMR in satisfaction of the DMR submission requirement of this permit. DMRs shall be submitted electronically to the Department no later than the 15th day of the month following the completed reporting period.

(c) Submittal of NetDMR Opt-Out Requests

If the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for electronically submitting DMRs and reports, the Commissioner may approve the submission of DMRs and other required reports in hard copy form ("opt-out request"). Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date a Permittee would be required under this permit to begin filing DMRs and other reports using NetDMR. This demonstration shall be valid for twelve (12) months from the date of the Department's approval

and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to the Department using NetDMR unless the Permittee submits a renewed opt-out request and such request is approved by the Department.

All opt-out requests and requests for the NetDMR subscriber form should be sent to the following address:

Attn: NetDMR Coordinator
Connecticut Department of Energy and Environmental Protection
Water Permitting and Enforcement Division – 2nd Floor
79 Elm Street
Hartford, CT 06106-5127

SECTION 8: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS, BYPASSES, MECHANICAL FAILURES, AND MONITORING EQUIPMENT FAILURES

- (A) If any Acute Aquatic Toxicity sample analysis indicates toxicity, or that the test was invalid, an additional sample of the effluent shall be collected and tested for Acute Aquatic Toxicity and associated chemical parameters, as described above in Section 5 and Section 6, and the results reported to the Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity) via the ATMR form (see Section 7 (B)) within 30 days of the previous test. These test results shall also be reported on the next month's DMR report pursuant to Section 7 (A). The results of all toxicity tests and associated chemical parameters, valid and invalid, shall be reported.
- (B) If any two consecutive Acute Aquatic Toxicity test results or any three Acute Aquatic Toxicity test results in a twelve month period indicates toxicity, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report, to the Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity), for the review and written approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the RCSA describing proposed steps to eliminate the toxic impact of the discharge on the receiving water body. Such a report shall include a proposed time schedule to accomplish toxicity reduction and the permittee shall comply with any schedule approved by the Commissioner.
- (C) Section 22a-430-3(k) of the RCSA shall apply in all instances of bypass including a bypass of the treatment plant or a component of the sewage collection system planned during required maintenance. The Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Planning and Standards Division, Municipal Facilities Section (860) 424-3704, the Department of Public Health, Water Supply Section (860) 509-7333 and Recreation Section (860) 509-7297, and the local Director of Health shall be notified within 2 hours of the permittee learning of the event by telephone during normal business hours. If the discharge or bypass occurs outside normal working hours (8:30 a.m. to 4:30 p.m. Monday through Friday), notification shall be made within 2 hours of the permittee learning of the event to the Emergency Response Unit at (860) 424-3338 and the Department of Public Health at (860) 509-8000. A written report shall be submitted to the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Planning and Standards Division, Municipal Facilities Section within five days of the permittee learning of each occurrence, or potential occurrence, of a discharge or bypass of untreated or partially treated sewage.
- The written report shall contain:
- (i) The nature and cause of the bypass, permit violation, treatment component failure, and/or equipment failure,
 - (ii) the time the incident occurred and the anticipated time which it is expected to continue or, if the condition has been corrected, the duration,
 - (iii) the estimated volume of the bypass or discharge of partially treated or raw sewage,
 - (iv) the steps being taken to reduce or minimize the effect on the receiving waters, and
 - (v) the steps that will be taken to prevent reoccurrence of the condition in the future.
- (D) Section 22a-430-3(j) 11 (D) of the RCSA shall apply in the event of any noncompliance with a maximum daily limit and/or any noncompliance that is greater than two times any permit limit. The permittee shall notify in the same manner as in paragraph C of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse Planning and Standards Division, Municipal Facilities Section except, if the noncompliance occurs outside normal working hours (8:30 a.m. to 4:30 p.m. Monday through Friday) the permittee may wait to make the verbal report until 10:30 am of the next business day after learning of the noncompliance.
- (E) Section 22a-430-3(j) 8 of the RCSA shall apply in all instances of monitoring equipment failures that prevent meeting the requirements in this permit. In the event of any such failure of the monitoring equipment including, but not limited to, loss of refrigeration for an auto-sampler or lab refrigerator or loss of flow proportion sampling ability, the permittee shall notify in the same manner as in paragraph C of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Planning and Standards Division,

Municipal Facilities Section except, if the failure occurs outside normal working hours (8:30 a.m. to 4:30 p.m. Monday through Friday) the permittee may wait to make the verbal report until 10:30 am of the next business day after learning of the failure.

- (F) In addition to the reporting requirements contained in Section 22a-430-3(i), (j), and (k) of the Regulations of Connecticut State Agencies, the permittee shall notify in the same manner as in paragraph C of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Planning and Standards Division, Municipal Facilities Section concerning the failure of any major component of the treatment facilities which the permittee may have reason to believe would result in an effluent violation.

SECTION 9: COMPLIANCE SCHEDULES

- (A) The permittee shall achieve the final water quality-based effluent limits for **Enterococci** for DSN 001-1 established in Table A of this permit, in accordance with the following:
- (1) On or before **365 days** after the date of issuance of this permit, the permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report which describes the actions to be taken by the permittee necessary to achieve compliance with the requirements in Table A of this permit for **Enterococci**. Such report shall include a schedule for implementation of such actions not to exceed **730 days** after the date of issuance of this permit.
 - (2) In accordance with the schedule approved in writing by the Commissioner, but in no event later than **730 days** after the date of issuance of this permit, the permittee shall perform the actions approved in writing by the Commissioner necessary to comply with the requirements in Table A of this permit for **Enterococci**. Within fifteen days after completing such actions, the permittee shall certify to the Commissioner in writing that the actions have been completed as approved by the Commissioner.
- (B) The permittee shall perform the approved actions in accordance with the approved schedule(s), but in no event shall the approved actions be completed later than: 730 days after the date of issuance of this permit for bacterial monitoring compliance. Within fifteen days after completing such actions, the permittee shall certify to the Commissioner in writing that the actions have been completed as approved.
- (C) The permittee shall use best efforts to submit to the Commissioner all documents required by this Section of the permit in a complete and approvable form. If the Commissioner notified the permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. In approving any document or other action under this Compliance Schedule, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this Section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.
- (D) Dates. The date of submission to the Commissioner of any document required by this section of the permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this section of the permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this Section of the permit means calendar day. Any document or action which is required by this Section only of the permit, to be submitted, or performed, by a date which falls on, Saturday, Sunday, or, a Connecticut or federal holiday, shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or Connecticut or federal holiday.
- (E) Notification of noncompliance. In the event that the permittee becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this Section of the permit or of any document required hereunder, the permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the permittee shall comply with any dates which may be approved in writing by the Commissioner. Notification by the permittee shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the Commissioner in writing.
- (F) Notice to Commissioner of changes. Within fifteen days of the date the permittee becomes aware of a change in any information submitted to the Commissioner under this Section of the permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the permittee shall submit the correct or omitted information to the Commissioner.
- (G) Submission of documents. Any document, other than a DMR, ATMR or MOR required to be submitted to the Commissioner under this Section of the permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

Joseph Higgins
Municipal Facilities Section
Planning and Standards Division

Bureau of Water Protection and Land Reuse
Department of Energy and Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127

This permit is hereby issued on *September 4, 2013*



Betsey Wingfield
Bureau Chief
Bureau of Water Protection and Land Reuse

ATTACHMENT 1

Tables A through F

TABLE A

Discharge Serial Number (DSN): 001-1		Monitoring Location: 1							
Wastewater Description: Sanitary Sewage									
Monitoring Location Description: Final Effluent									
Allocated Zone of Influence (ZOI): 84 cfs									
PARAMETER	Units	FLOW/TIME BASED MONITORING			INSTANTANEOUS MONITORING			REPORT FORM	Minimum Level Analysis See Section 6
		Average Monthly Limit	Maximum Daily Limit	Sample Freq.	Sample type	Instantaneous Limit or Required Range ³	Sample Freq.		
Alkalinity	mg/l	NA	NA	NR	NA	-----	Monthly	Grab	MOR
Biochemical Oxygen Demand (5 day) ¹ See mark (E) below	mg/l	20	40	NR	NA	NA	Twice per month	Grab	DMR/MOR
Fecal coliform May 1 st through September 30 th ⁴	Colonies per 100 ml	NA	NA	NR	NA	see remarks (A) and (B) below	Twice per month	Grab	DMR/MOR
Fecal coliform May 1 st through September 30 th ⁵ remark (C) below	Colonies per 100 ml	NA	NA	NR	NA	260	Twice per month	Grab	DMR/MOR
Enterococci ⁵ see remark (D) below	Colonies per 100 ml	NA	NA	NR	NA	500	Twice per month	Grab	DMR/MOR
Flow (Average Daily)	MGD	-----	-----	Continuous ²	Daily Flow	NA	NR	NA	DMR/MOR
Nitrogen, Ammonia (total as N)	mg/l	NA	-----	NR	NA	NA	Twice per month	Grab	MOR
Nitrogen, Nitrate (total as N)	mg/l	NA	-----	NR	NA	NA	Twice per month	Grab	MOR
Nitrogen, Nitrite (total as N)	mg/l	NA	-----	NR	NA	NA	Twice per month	Grab	MOR
Nitrogen, Total Kjeldahl	mg/l	NA	-----	NR	NA	NA	Twice per month	Grab	MOR
Nitrogen, Total	mg/l	NA	-----	NR	NA	NA	Twice per month	Grab	MOR
Nitrogen, Total (12 month rolling average) ⁶	lbs/day	4.0	-----	NR	NA	NA	Twice per month	Grab	DMR/MOR
Oxygen, Dissolved	mg/l	NA	NA	NR	NA	-----	Work Day	Grab	MOR
pH	S.U.	NA	NA	NR	NA	6 - 9	Work Day	Grab	DMR/MOR
Phosphate, Ortho	mg/l	NA	-----	NR	NA	NA	Monthly	Grab	MOR
Phosphorus, Total	mg/l	NA	-----	NR	NA	NA	Monthly	Grab	DMR/MOR
Solids, Settleable	ml/l	NA	NA	NR	NA	-----	Work Day	Grab	MOR
Solids, Total Suspended ¹ . See remark (E) below	mg/l	20	40	NR	NA	NA	Twice per month	Grab	DMR/MOR

Temperature	°F	NA	NA	NR	NA	-----	Work Day	Grab	MOR
Turbidity	NTU	NA	NA	NR	NA	-----	Work Day	Grab	MOR

TABLE A - CONDITIONS

Footnotes:

- 1 The discharge shall not exceed an average monthly 20 mg/l or a maximum daily of 40 mg/l.
- 2 The permittee shall record and report on the monthly operating report the minimum, maximum and total flow for each day of discharge and the average daily flow for each sampling month. The permittee shall report, on the discharge monitoring report, the average daily flow and maximum daily flow for each sampling month.
- 3 The instantaneous limits in this column are maximum limits.
- 4 During the period beginning at the date of issuance of this permit and lasting until the implementation of Enterococci and new fecal coliform monitoring requirements, the discharge shall not exceed and shall otherwise continue to conform to specific terms and conditions listed in remarks A and B below.
- 5 During the period beginning after the implementation of the new bacteria monitoring requirements described below, but no later than 730 days after permit issuance and lasting until expiration, the discharge shall not exceed and shall otherwise conform to the specific terms and conditions listed in remarks C and D below as applicable. See section 9 above for additional compliance requirements.
- 6 The twelve month rolling average limit is defined as the average of the current months' weekly samples in pounds per day (the current monthly average) averaged with the averages from the previous eleven months.

Remarks:

- (A) The geometric mean of the Fecal coliform bacteria values for the effluent samples collected in a period of a calendar month during the period from May 1st through September 30th shall not exceed 200 per 100 milliliters.
- (B) The geometric mean of the Fecal coliform bacteria values for the effluent samples collected in a period of a calendar week during the period from May 1st through September 30th shall not exceed 400 per 100 milliliters.
- (C) The geometric mean of the Fecal coliform bacteria values for the effluent samples collected in a period of a calendar month during the period from May 1st through September 30th shall not exceed 88 per 100 milliliters.
- (D) The geometric mean of the Enterococci bacteria values for the effluent samples collected in a period of a calendar month during the period from May 1st through September 30th shall not exceed 35 per 100 milliliters.
- (E) The Average Weekly discharge Limitation for BOD5 and Total Suspended Solids shall be 1.5 times the Average Monthly Limit listed above.

TABLE B

Discharge Serial Number (DSN): 001-1		Monitoring Location: K			
Wastewater Description: Sanitary Sewage					
Monitoring Location Description: Final Effluent					
Allocated Zone of Influence (ZOI): 84 cfs			In-stream Waste Concentration (IWC): 1 %		
PARAMETER	Units	FLOW/TIME BASED MONITORING			REPORT FORM
		Average Monthly Minimum	Sample Freq.	Sample type	
Biochemical Oxygen Demand (5 day) Percent Removal ¹	% of Influent	85	Twice per Month	Calculated ²	DMR/MOR
Solids, Total Suspended Percent Removal ¹	% of Influent	85	Twice per month	Calculated ²	DMR/MOR
TABLE B -- CONDITIONS					
Footnotes:					
¹ The discharge shall be less than or equal to 15% of the average monthly influent BOD ₅ and total suspended solids (Table E, Monitoring Location G).					
² Calculated based on the average monthly results described in Table A. Removal efficiency = $\frac{\text{Inf.BOD or TSS} - \text{Effluent BOD or TSS}}{\text{Inf.BOD or TSS}} \times 100$					

TABLE C

Discharge Serial Number (DSN): 001-1				Monitoring Location: T		
Wastewater Description: Sanitary Sewage						
Monitoring Location Description: Final Effluent after disinfection						
Allocated Zone of Influence (ZOI): 84 cfs			In-stream Waste Concentration (IWC): 1 %			
PARAMETER	Units	Maximum Daily Limit	Sampling Frequency	Sample Type	Reporting form	Minimum Level Analysis See Section 6
Aluminum, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Antimony, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
NOAEL Static 48Hr Acute D. Pulex ¹	% survival	-----	Semi-Annual	Grab	ATMR/DMR	
NOAEL Static 48Hr Acute Pimephales ¹	% survival	-----	Semi-Annual	Grab	ATMR/DMR	
Arsenic, Total	mg/l	-----	Semi-Annual	Grab	ATMR	*
Beryllium, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
BOD ₅	mg/l	-----	Semi-Annual	Grab	ATMR	
Cadmium, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Chromium, Hexavalent	mg/l	-----	Semi-Annual	Grab	ATMR	
Chromium, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Chlorine, Total Residual	mg/l	-----	Semi-Annual	Grab	ATMR	
Copper, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Cyanide, Amenable	mg/l	-----	Semi-Annual	Grab	ATMR	
Cyanide, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Iron, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Lead, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Mercury, Total	mg/l	-----	Semi-Annual	Grab	ATMR	*
Nickel, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Nitrogen, Ammonia (total as N)	mg/l	-----	Semi-Annual	Grab	ATMR	
Nitrogen, Nitrate, (total as N)	mg/l	-----	Semi-Annual	Grab	ATMR	
Nitrogen, Nitrite, (total as N)	mg/l	-----	Semi-Annual	Grab	ATMR	
Phosphorus, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Phenols, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Selenium, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Silver, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Suspended Solids, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Thallium, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
Zinc, Total	mg/l	-----	Semi-Annual	Grab	ATMR	
TABLE C - CONDITIONS						
Remarks: ¹ The results of the Toxicity Tests are recorded in % survival. The permittee shall report % survival on the DMR based on criteria in Section 6(B) of this permit.						
ATMR – Aquatic Toxicity Monitoring Report						

TABLE D

Discharge Serial Number: 001-1		Monitoring Location: N		
Wastewater Description: Activated Sludge				
Monitoring Location Description: Each SBR Unit				
PARAMETER	REPORTING FORMAT	INSTANTANEOUS MONITORING		REPORTING FORM
		Sample Frequency	Sample Type	
Oxygen, Dissolved	High & low for each WorkDay	4/WorkDay	Grab	MOR
Sludge Volume Index	WorkDay	WorkDay	Grab	MOR
Mixed Liquor Suspended Solids	WorkDay	WorkDay	Grab	MOR

TABLE E

Discharge Serial Number: 001-1			Monitoring Location: G				
Wastewater Description: Sanitary Sewage							
Monitoring Location Description: Influent							
PARAMETER	Units	DMR REPORTING FORMAT	FLOW/TIME BASED MONITORING		INSTANTANEOUS MONITORING		REPORTING FORM
			Sample Frequency	Sample Type	Sample Frequency	Sample Type	
Alkalinity,	mg/l		NA	NA	Monthly	Grab	MOR
Biochemical Oxygen Demand (5 day)	mg/l	Monthly average	NA	NA	Twice per month	Grab	DMR/MOR
Nitrogen, Ammonia (total as N)	mg/l		NA	NA	Monthly	Grab	MOR
Nitrogen, Nitrate (total as N)	mg/l		NA	NA	Monthly	Grab	MOR
Nitrogen, Nitrite (total as N)	mg/l		NA	NA	Monthly	Grab	MOR
Nitrogen, Total Kjeldahl	mg/l		NA	NA	Monthly	Grab	MOR
Nitrogen, Total	mg/l		NA	NA	Monthly	Grab	MOR
Phosphate, Ortho	mg/l		NA	NA	Monthly	Grab	MOR
Phosphorus, Total	mg/l		NA	NA	Monthly	Grab	MOR
pH	S.U.		NA	NA	Work Day	Grab	MOR
Solids, Total Suspended	mg/l	Monthly average	NA	NA	Twice per month	Grab	DMR/MOR
Temperature	°F		NA	NA	Work Day	Grab	MOR

TABLE F

Discharge Serial Number: 001-1		Monitoring Location: SL	
Wastewater Description: Thickened Sludge			
Monitoring Location Description: At sludge draw off			
PARAMETER	INSTANTANEOUS MONITORING		REPORTING FORM
	Units	Grab Sample Freq.	
Arsenic, Total	mg/kg	annual	DMR
Beryllium, Total	mg/kg	annual	DMR
Cadmium, Total	mg/kg	annual	DMR
Chromium, Total	mg/kg	annual	DMR
Copper, Total	mg/kg	annual	DMR
Lead, Total	mg/kg	annual	DMR
Mercury, Total	mg/kg	annual	DMR
Nickel, Total	mg/kg	annual	DMR
Nitrogen, Ammonia *	mg/kg	annual	DMR*
Nitrogen, Nitrate (total as N) *	mg/kg	annual	DMR*
Nitrogen, Organic *	mg/kg	annual	DMR*
Nitrogen, Nitrite (total as N) *	mg/kg	annual	DMR*
Nitrogen, Total *	mg/kg	annual	DMR*
pH *	S.U.	annual	DMR*
Polychlorinated Biphenyls	mg/kg	annual	DMR
Solids, Fixed	%	annual	DMR
Solids, Total	%	annual	DMR
Solids, Volatile	%	annual	DMR
Zinc, Total	mg/kg	annual	DMR
<p>(*) required for composting or land application only Testing for inorganic pollutants shall follow "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 as updated and/or revised.</p>			

ATTACHMENT 2

MONTHLY OPERATING REPORT FORM

DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: Town of East Haddam

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #: CT0101761 APPLICATION #: 201000819 FACILITY ID. 041-001

<u>Mailing Address:</u> Street: 7 Main Street City: East Haddam ST: CT Zip: 06423 Contact Name: Mark B. Walter, First Selectman Phone No.: 860-873-5020	<u>Location Address:</u> Street: 17 Lumberyard Rd. City: East Haddam ST: CT Zip: 06423 Contact Name: Paul Goulet Phone No.: 860-873-2460 DMR Contact email address: pgoulet1437@sbcglobal.net
---	---

PERMIT INFORMATION

DURATION 5 YEAR 10 YEAR 30 YEAR

TYPE New Reissuance Modification

CATEGORIZATION POINT (X) NON-POINT () GIS #

NPDES (X) PRETREAT () GROUND WATER(UIC) () GROUND WATER (OTHER) ()

NPDES MAJOR(MA)

NPDES SIGNIFICANT MINOR or PRETREAT SIU (SI)

NPDES or PRETREATMENT MINOR (MI)

COMPLIANCE SCHEDULE YES NO

POLLUTION PREVENTION TREATMENT REQUIREMENT

WATER QUALITY REQUIREMENT OTHER

OWNERSHIP CODE

Private Federal State Municipal (town only) Other public

DEP STAFF ENGINEER Joseph D. Higgins

PERMIT FEES

Discharge Code	DSN Number	Annual Fee
111000b	001-1	\$1722.50

FOR NPDES DISCHARGES

Drainage Basin Code: 4000 Water Quality Classification Goal: **SB**
Segment: Connecticut River **00**

NATURE OF BUSINESS GENERATING DISCHARGE

Municipal Sanitary Sewage Treatment

PROCESS AND TREATMENT DESCRIPTION (by DSN)

Secondary biological treatment SBR and seasonal ultra violet disinfection and year round nitrogen removal

RESOURCES USED TO DRAFT PERMIT

Federal Effluent Limitation Guideline 40CFR 133 *Secondary Treatment Category*

Performance Standards

- Federal Development Document
- Department File Information
- Connecticut Water Quality Standards
- Anti-degradation Policy
- Coastal Management Consistency Review Form
- Other - Explain

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

- Secondary Treatment (Section 22a-430-4(r) of the Regulations of Connecticut State Agencies)
- Case-by-Case Determination (See Other Comments)
- In order to meet in-stream water quality (See General Comments)
- Anti-degradation policy

GENERAL COMMENTS

The Town/City of East Haddam operates a municipal water pollution control facility ("the facility") located at 17 Lumberyard Rd. East Haddam, CT. The facility is designed to treat and discharge up to 55 thousand gallons a day of effluent into the Connecticut River. The facility currently uses secondary treatment with UV disinfection to treat effluent before being discharged. Pursuant to Conn. Gen. Stat. § 22a-430, the Department of Energy and Environmental Protection has issued East Haddam a permit for the discharge from this facility. East Haddam has submitted an application to renew its permit. The Department has made a tentative determination to approve East Haddam's application and has prepared a draft permit consistent with that determination.

The most significant changes from the current permit are the inclusion of revised bacteria monitoring requirements for fecal coliform and enterococci, Aluminum monitoring to be consistent with the most recent CT Water Quality Standards and Iron monitoring to be consistent with EPA's National Recommended Water Quality Criteria.

The Department reviewed the application for consistency with Connecticut's Water Quality Standards and determined that with the limits in the draft permit, including those discussed below, that the draft permit is consistent with maintenance and protection of water quality in accordance with the Tier I Anti-degradation Evaluation and Implementation Review provisions of such Standards)

On August 6, 2013 Grant Weaver requested consideration for collecting grab samples for influent and effluent compliance monitoring. This request was granted.

WATER QUALITY LIMIT CALCULATIONS

See attached

Effluent Chemistry: **EAST HADDAM WPCF**

as of Monday, July 01, 2013

Design Flow 0.059 MGD

Avg. Monthly Flow *11: 0.015 MGD

Max. Monthly Flow *11: 0.023 MGD

Receiving Waterbody: Connecticut River

Allocated ZOI: 100:1 cfs

Database IWC: 1% (allocated)

Date	BOD	TSS	NH3	NO2	NO3	CNT	CNA	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg
5/13/2005	2.00	< 10.00	11.00	0.720	0.95	< 10.0	< 10.0	< 1.0	4.0	< 1.0	17.0	1.0	16.0	< 1.0	< 2.0	3.0	< 1.0	19.0	13.0	< 10.0	< 15.0	< 0.2
8/17/2005	2.00	11.00	1.30	0.060	1.00	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	4.0	< 1.0	< 2.0	< 2.0	2.0	30.0	< 5.0	< 10.0	< 15.0	< 0.2
2/8/2006	2.00	< 5.00	4.70	0.520	0.76	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	13.0	< 1.0	< 2.0	3.0	< 1.0	44.0	< 5.0	< 10.0	< 15.0	< 0.2
8/9/2006	2.00	< 5.00	0.11	< 0.020	3.60	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	6.0	2.0	< 2.0	5.0	< 1.0	26.0	< 5.0	< 10.0	41.0	< 0.2
2/28/2007	6.80	10.00	0.70	0.060	3.30	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	20.0	< 1.0	< 2.0	3.0	< 1.0	46.0	< 5.0	< 10.0	< 15.0	< 0.2
8/8/2007	4.00	< 5.00	0.17	< 0.010	8.10	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	7.0	< 1.0	< 2.0	2.0	< 1.0	38.0	< 5.0	< 10.0	< 15.0	< 0.2
2/13/2008	4.60	< 5.00	1.40	0.990	2.40	< 10.0	< 10.0	< 1.0	< 5.0	< 1.0	< 10.0	< 1.0	14.0	< 1.0	< 2.0	2.0	< 1.0	38.0	< 5.0	< 10.0	< 30.0	< 0.2
8/13/2008	4.00	< 5.00	0.21	< 0.010	3.30	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	8.0	2.0	< 2.0	2.0	< 1.0	43.0	< 5.0	< 10.0	< 15.0	< 0.2
8/5/2009	7.20	< 5.00	0.29	< 0.010	1.30	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	1.0	6.0	< 1.0	< 2.0	4.0	< 1.0	33.0	< 5.0	< 10.0	< 15.0	< 0.2
2/17/2010	4.40	< 5.00	0.47	0.030	2.00	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	10.0	< 1.0	< 2.0	4.0	< 1.0	26.0	< 5.0	< 10.0	< 15.0	< 0.2
8/18/2010	4.00	< 5.00	0.19	< 0.010	2.90	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	5.0	< 1.0	< 2.0	3.0	< 1.0	33.0	< 5.0	< 10.0	< 15.0	< 0.2
3/16/2011	5.50	5.10	0.34	0.060	5.50	< 10.0	< 10.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	16.0	< 1.0	< 2.0	4.0	< 1.0	55.0	< 5.0	< 10.0	< 15.0	< 0.2
8/17/2011	4.00	3.50	0.18	< 0.010	2.00	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	6.0	< 1.0	< 2.0	4.0	< 1.0	31.0	< 5.0	< 10.0	< 15.0	< 0.2
3/7/2012	12.00	5.70	17.00	0.050	2.21	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	13.0	< 1.0	< 2.0	3.0	< 1.0	21.0	< 5.0	< 10.0	< 15.0	< 0.2
8/15/2012	4.00	2.60	0.12	0.030	3.95	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	< 5.0	< 1.0	< 2.0	3.0	< 1.0	28.0	< 5.0	< 10.0	< 15.0	< 0.0
3/20/2013	4.00	3.60	0.90	1.000	2.40	< 10.0	< 10.0	< 1.0	< 4.0	< 1.0	< 10.0	< 1.0	9.0	< 1.0	< 2.0	3.0	< 1.0	40.0	< 5.0	< 10.0	< 15.0	< 0.2

BOD	TSS	NH3	NO2	NO3	CNT	CNA	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
#Error	7	16	10	16	0	0	0	2	0	1	2	15	2	0	15	1	16	1	0	1	0	0
Average	5.72	2.44	0.224	2.85	10.0	10.0	1.0	4.4	1.0	10.4	1.0	9.9	1.1	2.0	3.1	1.1	34.4	5.5	10.0	17.6	0.2	
Maximum	11.00	17.00	1.000	8.10	10.0	10.0	1.0	10.0	1.0	17.0	1.0	20.0	2.0	2.0	5.0	2.0	55.0	13.0	10.0	41.0	0.2	
CV	0.6	0.4	2.0	1.6	0.7	0.0	0.0	0.3	0.0	0.2	0.0	0.5	0.3	0.0	0.3	0.2	0.3	0.4	0.0	0.4	0.3	

Normal => ug/L

Bold => mg/L

	A	B	C	D	E	F	G
1	WQB LIMITS:						
2							
3	Discharger: East Haddam WPCF				by: HigginsJo, 6/26/2013, 15:02		
4	Receiving Water: Connecticut River			CURRENT CONDITIONS			
5	Design Flow:	0.550	MGD	Avg. Flow:	0.015	MGD	
6	Allocated ZOI:	100.00	CFS	Max. Flow:	0.023	MGD	
7	Samples/Month:	4		IWC:	0.84	%	
8							
9	WQB Limits - Freshwater						
10			AML	MDL	AML	MDL	LIMIT?
11	Compound	C.V.	ug/l	ug/l	kg/d	kg/d	ML?
12							
13	Aluminum	0.6	8.44E+03	1.69E+04	1.76E+01	3.53E+01	
14	Ammonia	2.5	4.59E+04	1.46E+05	9.57E+01	3.05E+02	
15	Antimony	0.0	2.25E+04	2.25E+04	4.69E+01	4.69E+01	
16	Arsenic	0.4	2.10E-02	3.52E-02	4.38E-05	7.33E-05	ML
17	Beryllium	0.0	4.27E+02	4.27E+02	8.89E-01	8.89E-01	
18	Cadmium	0.0	1.48E+01	1.48E+01	3.09E-02	3.09E-02	
19	Chlorine	0.6	7.28E+02	1.46E+03	1.52E+00	3.04E+00	
20	Chromium (hex)	0.0	1.30E+03	1.30E+03	2.72E+00	2.72E+00	
21	Chromium (tri)	0.0	4.98E+03	4.98E+03	1.04E+01	1.04E+01	
22	Copper	0.4	3.67E+02	6.15E+02	7.65E-01	1.28E+00	
23	Cyanide (amen)	0.0	1.19E+02	1.19E+02	2.47E-01	2.47E-01	
24	Lead	0.3	1.28E+02	1.93E+02	2.68E-01	4.01E-01	
25	Mercury	0.4	6.04E+00	1.01E+01	1.26E-02	2.11E-02	
26	Nickel	0.0	9.72E+02	9.72E+02	2.02E+00	2.02E+00	
27	Phenol	0.3	1.71E+04	2.57E+04	3.57E+01	5.35E+01	
28	Selenium	0.0	5.93E+02	5.93E+02	1.23E+00	1.23E+00	
29	Silver	0.0	1.21E+02	1.21E+02	2.52E-01	2.52E-01	
30	Thallium	0.0	5.69E+01	5.69E+01	1.19E-01	1.19E-01	
31	Zinc	0.3	5.14E+03	7.70E+03	1.07E+01	1.60E+01	
32							
33							
34							
35							
36	Current Conditions						
37			AMC	MMC	AMM	MMM	
38	Compound	# DETECTS	ug/l	ug/l	kg/d	kg/d	
39							
40	Aluminum				0.00E+00	0.00E+00	
41	Ammonia	10	2.11E+00	1.70E+01	1.20E-04	1.48E-03	
42	Antimony	0	5.00E+00	5.00E+00	2.84E-04	4.36E-04	
43	Arsenic	1	4.70E+00	1.00E+01	2.67E-04	8.71E-04	
44	Beryllium	0	1.00E+00	1.00E+00	5.68E-05	8.71E-05	
45	Cadmium	0	1.00E+00	1.00E+00	5.68E-05	8.71E-05	
46	Chlorine						
47	Chromium (hex)	0	1.00E+01	1.00E+01	5.68E-04	8.71E-04	
48	Chromium (tri)	1	1.00E+00	1.00E+00	5.68E-05	8.71E-05	
49	Copper	9	9.20E+00	1.60E+01	5.23E-04	1.39E-03	
50	Cyanide (amen)	0	1.00E+01	1.00E+01	5.68E-04	8.71E-04	
51	Lead	1	1.10E+00	2.00E+00	6.25E-05	1.74E-04	
52	Mercury	0	2.00E-01	2.00E-01	1.14E-05	1.74E-05	
53	Nickel	10	3.20E+00	4.00E+00	1.82E-04	3.48E-04	
54	Phenol	0	1.65E+01	3.00E+01	9.38E-04	2.61E-03	
55	Selenium	0	1.00E+01	1.00E+01	5.68E-04	8.71E-04	
56	Silver	0	1.00E+00	1.00E+00	5.68E-05	8.71E-05	
57	Thallium	0	2.00E+00	2.00E+00	1.14E-04	1.74E-04	
58	Zinc	10	3.48E+01	5.50E+01	1.98E-03	4.79E-03	

	A	B	C	D	E	F	G
60	Final WQB Limits						
61		<u>AML (kg/d)</u>	<u>MDL (kg/d)</u>				
62							
63							
64							
65	Interim WQB Limits						
66		<u>AML (kg/d)</u>	<u>MDL (kg/d)</u>				
67							
68							
69							
70	Minimum Levels						
71							
72	Arsenic	0.005 mg/L					
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