Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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NPDES PERMIT

Issued to

Permittee:
City of Waterbury
235 Grand Street
Waterbury, Connecticut 06702

Location Address:
Waterbury WPCF
210 Municipal Road
Waterbury, Connecticut 06708

Permit ID: CT0100625 **Design Flow Rate:** 27.05 MGD **Effective Date:** 01/01/2020

Receiving Stream: Naugatuck River **Permit Expires:** 12/31/2024

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued 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 City of Waterbury, ("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) and (l)(2) 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 $3,320.00

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 June except in the case of Chronic Toxicity when the samples must be collected in the months of July, August or September of each year.

"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-Monthly" in the context of any sampling frequency, shall mean once every two months including the months of February, April, June, August, October and December.

"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.

"Completion of the facility expansion and upgrade" means when the engineer provides certificates of substantial completion for all of the treatment structures.

"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 Permittee 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 modification of the existing system or installation of a new system would protect the waters of the state from pollution. The Commissioner's decision is based on application #201809987 for permit reissuance received on August 6, 2018, 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 50,000 gallons per day shall be allowed by the Permittee until the Permittee has notified in writing the Connecticut Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater Section, 79 Elm Street, Hartford, CT 06106-5127 of said new discharge.

(C) On or before 30 days after the treatment plant raw sewage bypass is used, the Permittee shall submit to the Commissioner for his review and written approval, a complete and thorough report including an analysis of the probability of future raw bypasses and provide a detailed mitigation plan. Any and all bypasses from this structure shall be reported in accordance with Section 8 of this permit.

(D) 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.

(E) 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.

(F) No sludge deposits-solid refuse-floating solids oils and grease-scum except for small amounts that may result from the discharge from a grease waste treatment facility providing appropriate treatment and none exceeding levels necessary to protect and maintain all designated uses.

(G) No color resulting in obvious discoloration of the surface water outside of any designated zone of influence.

(H) No suspended and settleable solids in concentrations or combinations which would impair the designated uses; none aesthetically objectionable; none which would significantly alter the physical or chemical composition of bottom sediments; none which would adversely impact organisms living in or on the bottom sediment.

(I) No silt or sand deposits other than of natural origin except as may result from normal road maintenance and construction activity provided all reasonable controls or Best Management Practices are used in such activities and all designated uses are protected and maintained.

(J) No turbidity other than of natural origin except as may result from normal agricultural, road maintenance, or construction activity, or discharge from a waste treatment facility providing appropriate treatment, dredging activity or discharge of dredged or fill materials provided

all reasonable controls and Best Management Practices are used to control turbidity and none exceeding levels necessary to protect and maintain all designated uses.

(K) Taste and odor as naturally occurs and none that would impair any uses specifically assigned to this Class.

(L) No discharge from the permitted facility 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.

(M) 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.

(N) The average monthly effluent concentration shall not exceed 15% of the average monthly influent concentration for BOD_5 and Total Suspended Solids for all daily composite samples taken in any calendar month. The 15% provision is waived during periods when the facility is treating dilute influent due to storm runoff collected by the combined sewer system causing influent flows to exceed 50.3 MGD. The permittee shall state on the monthly Discharge Monitoring Reports (DMR) and Monthly Operating Report (MOR) when exceedance of the 15% provision is due to storm induced flows.

(O) 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.

(P) 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 Permittee' sludge use or disposal practice. A change in the Permittee' 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.

(Q) This permit becomes effective on the 1st day of the month following the date of signature of the Commissioner or designee.

(R) 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.

(S) When the arithmetic mean of the average daily BOD_5 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 and approval 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.

(T) 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.

(U) 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.

(V) The Permittee is hereby authorized to accept septage at the treatment facility; or other locations as approved by the Commissioner.

(W) 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 beyond the permitted zone of influence.

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 G** 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.

(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, Tables A and 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.

Parameter	Minimum Level
Aluminum, Total	0.050 mg/l
Antimony, Total	0.010 mg/l
Arsenic, Total	0.005 mg/l
Beryllium, Total	0.001 mg/l
Cadmium, Total	0.0005 mg/l
Chlorine, Total Residual	0.050 mg/l
Chromium, Total	0.005 mg/l
Chromium, Total Hexavalent	0.010 mg/l
Copper, Total	0.005 mg/l
Cyanide, Total	0.010 mg/l
Iron, Total	0.040 mg/l
Lead, Total	0.005 mg/l
Mercury, Total	0.0002 mg/l
Nickel, Total	0.005 mg/l
Phosphorus, Total	0.10 mg/l
Selenium, Total	0.005 mg/l
Silver, Total	0.002 mg/l
Thallium, Total	0.005 mg/l
Zinc, Total	0.020 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 Acute 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 limit 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 limit 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 $CaCO_3$ shall be used as dilution water in the tests.

(d) Copper nitrate shall be used as the reference toxicant.

(5) For limits expressed as NOAEL = 100%, compliance shall be demonstrated when the results of a valid pass/fail Acute Aquatic Toxicity Test indicate 90% or greater survival in the effluent sample at the CTC (100%).

(C) Chronic Aquatic Toxicity Test for Freshwater Discharges

(1) Chronic Aquatic Toxicity testing of the discharge shall be conducted annually during July, August, or September of each year.

(2) Chronic Aquatic Toxicity testing shall be performed on the discharge in accordance with the test methodology established in "Short-Term Methods for Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms" (EPA-821-R-02-013) as referenced in 40 CFR 136 for *Ceriodaphnia* survival and reproduction and Fathead minnow larval survival and growth.

(a) Chronic Aquatic Toxicity tests shall utilize a minimum of five effluent dilutions prepared using a dilution factor of 0.5 (100%

effluent, 50% effluent, 25% effluent, 12.5% effluent, 6.25% effluent).

(b) Naugatuck River water collected immediately upstream of the area influenced by the discharge shall be used as control (0% effluent) and dilution water in the toxicity tests.

(c) A laboratory water control consisting of synthetic freshwater prepared in accordance with EPA-821-R-02-013 at a hardness of 50±5 mg/l shall be used as an additional control (0% effluent) in the toxicity tests.

(d) Daily composite samples of the discharge (final effluent following disinfection) and grab samples of the Naugatuck River, for use as site water control and dilution water, shall be collected on day 0 for test solution renewal on day 1 and day 2 of the test; day 2, for test solution renewal on day 3 and day 4 of the test; and day 4, for test solution renewal for the remainder of the test. Samples shall not be pH or hardness adjusted, or chemically altered in any way.

(3) All samples of the discharge and Naugatuck River water used in the Chronic Aquatic Toxicity test shall, at a minimum, be analyzed and results reported in accordance with the provisions listed in Section 6(A) of this permit for the parameters listed in Attachment 1, Table C included herein, excluding Acute Aquatic Toxicity organism testing.

SECTION 7: RECORDING AND REPORTING REQUIREMENTS

(A) The Permittee and/or the Signatory Authority shall continue to report the results of chemical analyses and any aquatic toxicity test required above in Section 5 and the referenced Attachment 1 by electronic submission of DMRs under this permit to the Department using NetDMR in satisfaction of the DMR submission requirement of this permit. The report shall include a detailed explanation of any violations of the limitations specified. DMRs shall be submitted electronically to the Department no later than the 15th day of the month following the month in which samples are collected.

(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, LC_{50} 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 below 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
Water Planning and Management Division
79 Elm Street
Hartford, Connecticut 06106-5127

(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 (B) of this permit by the 15th day of the month following the month in which the data and samples are collected.

(D) A complete and thorough report of the results of the chronic toxicity monitoring outlined in Section 6(C) shall be prepared as outlined in Section 10 of EPA-821-R-02-013 and submitted to the Department for review on or before December 31 of each calendar year to the address specified above in Section 7 (B) of this permit.

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) Sewage Right-to-Know Electronic Bypass Reporting -

(1) 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, Water Planning and Management Division, Municipal Wastewater, the Department of Public Health, Water Supply Section and Recreation Section, and the local Director of Health shall be notified within 2 hours of the Permittee learning of the event via online reporting in a format approved by the Commissioner. A final incident report shall be submitted to the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater within five days of the Permittee learning of each occurrence of a discharge or bypass of untreated or partially treated sewage via online reporting in a format approved by the Commissioner.

If the online reporting system is nonfunctional, then the Permittee shall notify DEEP via telephone during normal business hours (8:00 a.m. to 4:30 p.m. Monday through Friday) at (860) 424-3704 or after hours to the DEEP Emergency Response Unit at (860) 424-3338 and the Department of Public Health at (860) 509-8000 with the final incident report being submitted online.

(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 (1) of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater Section except, if the online reporting system is nonfunctional and 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 (1) of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater Section except, if the online reporting system is nonfunctional and 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 (1) of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater 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: COMBINED SEWER OVERFLOWS

(A) The Permittee shall continue to maintain the following Best Management Practices (BMPs) to reduce the impact of existing CSO's on the receiving waters. Detailed records of BMP activities shall be kept.

(1) The Permittee has identified the position of Project Manager of Jacobs Engineering Group as operations and maintenance manager to be in responsible charge of the wastewater collection system and serve as the contact person for department personnel regarding combined sewer discharges. Within ten days after retaining anyone other than the one originally identified, the Permittee shall notify the Commissioner in writing of the identity of such other operations and maintenance manager.

(2) The Permittee shall use, to the maximum extent practicable, available sewerage system transportation capabilities for the conveyance of combined sewage to treatment facilities.

(3) When influent flows exceed **50.3 MGD**, in response to wet weather flow, i.e. rainfall or snowmelt conditions, the Permittee is authorized to discharge from outfall serial number 002-1, chlorine disinfected primary treated combined sewer wastewater.

(4) Any information on the locations of any outfalls and regulators in addition to outfall 002-1 shall be submitted to the Commissioner within 30 days of the effective date of this permit or the date the Permittee becomes aware of such information, whichever is earlier.

(5) Control Requirements for Combined Sewer Overflows (CSO's)

(a) Dry weather overflows are prohibited. Any such discharge from outfall 002-1 constitutes a bypass and is subject to the requirements

of Section 8 of this permit.

(b) The discharge from 002-1 shall not contain septage or holding tank waste.

(c) Discharges from 002-1 shall not cause violations of State Water Quality Standards.

(6) On or before **February 15th, annually**, the Permittee shall submit a report on a form and in a manner prescribed by the Commissioner including the results of all monitoring from the previous calendar year for discharge 002-1 and the following information:

(a) the date, time, quantity and duration of each precipitation event;

(b) the date, time, duration, quality and volume for each discharge event;

(7) The sewage system shall be inspected and maintained such that deposition of solids and/or other obstructions does not cause restrictions in flow resulting in unnecessary wet weather overflows and to ensure that dry weather discharges are not occurring.

(8) The Permittee shall reduce excessive infiltration/inflow to the sewer system.

(9) The Permittee shall review its existing Sewer Use Ordinance, to ensure the language required under Section 4 of this permit has been incorporated. A copy of ordinance shall be submitted to the Department for verification. If the ordinance is revised, a copy of the ordinance must be submitted to the Department within **60** days from the effective date of the change for verification, review and approval. The Sewer Use Ordinance shall:

(a) prohibit the construction of new combined sewers except in cases where repair or replacement of the existing system is approved in writing by the Commissioner, and

(b) prohibit the introduction of new inflow sources to the existing system.

(B) 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.

(C) 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:

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

SECTION 10: REGIONAL MUNICIPAL SLUDGE INCINERATOR FACILITIES

(A) On or before 90 days after the effective date of this permit, the Permittee shall submit to the Commissioner for review and approval either: (i) verification that the previously submitted and approved wastewater sludge screening, monitoring and reporting protocol for acceptance of wastewater sludges generated from outside sources that will be transported to the Permittee POTW for further processing and disposal by means of incineration has not changed or (ii) the new protocol. "Transported" means trucked or hauled wastewater sludge taken to dedicated receiving facilities at the POTW. "Sludge" means solid, semi-solid or liquid residue generated from municipal, residential, commercial or industrial biological wastewater treatment processes exclusive of the treated effluent, including water treatment wastewater sludges. Such protocol shall address and include, at a minimum, the following elements:

(1) All Out of State Municipal POTW Sewage Sludge Generators and All Out of State Privately Owned Domestic Sewage Sludge Generators

(a) The Permittee shall monitor or cause each generator to monitor the pollutants specified in Table G of this permit at a frequency no less

than quarterly. These results shall be included in the annual report described in subparagraph 3.d. below. In the event of an infrequent delivery to the POTW, the generator shall submit monitoring results for all the pollutants listed in Table G from a representative sludge sample generated and collected within the previous three months.

(b) Each out of state generator must be analyzed by the Permittee for all the pollutants listed in Table G prior to acceptance at the POTW. The Permittee shall determine that each such source is compatible with all other wastewater sludges accepted for incineration.

(c) Each out of state generator shall provide a description of the domestic, commercial and industrial components generating the biological sludge.

(2) All (In-state or Out-of-State) Commercial and Industrial (Non-Domestic) Sludges

(a) Prior to acceptance of any non-domestic wastewater sludge for incineration, the Permittee shall, as applicable, require the generator of such sludge to: **(i)** submit to the POTW a copy of its current active individual wastewater discharge permit issued by DEP under section 22a-430 of the Connecticut General Statutes (CGS); **(ii)** if eligible under DEP's general permit program (section 22a-430b CGS), submit to the POTW a copy of that permit and, if required, the associated registration; or **(iii)** submit to the POTW a copy of any pertinent emergency or temporary authorization issued by the Commissioner pursuant to section 22a-6k CGS.

(3) Permittee Actions

(a) The Permittee shall conduct at its facility bimonthly monitoring of all the pollutants listed in Table G on a representative sample of filter cake taken prior to incineration.

(b) The Permittee shall conduct annual monitoring of all the pollutants listed in Table G for each municipal POTW and private sewage sludge generator accepted for incineration.

(c) The Permittee shall include in its Monthly Operating Report (MOR) a list of all municipal, private and commercial/industrial sludge sources and the quantity of sludge accepted from each source.

(d) Beginning April 15th of the second year after approval of this protocol and each year after, the Permittee shall submit to the Commissioner an annual report for the previous calendar year which will include the following:

(i) A statement certifying that all new out of state generators have been screened for acceptance in accordance with the approved protocol.

(ii) A statement certifying that the Permittee has monitored or caused the generator of all out of state municipal POTW sewage sludge and privately owned domestic sewage sludge to monitor its wastewater sludge in accordance with paragraph (1) (a).

(iii) A statement certifying that all generators of commercial and industrial (non-domestic) wastewater sludge accepted for incineration have complied with the requirements of paragraph (2) (a).

(iv) A copy of the Permittee most current annual 40CFR 503 report.

(v) The individuals responsible for submitting the report shall certify in writing the following: "I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

SECTION 11: COMPLIANCE SCHEDULES

(A) The Permittee shall achieve the final water quality-based effluent limits for Aluminum for DSN 001-1 established in Section 5 of this permit, in accordance with the following:

(1) On or before 180 days after the effective date of this permit, submit for the Commissioner's review and written approval, a report detailing a system-wide mass balance analysis which evaluates the relative loading of Aluminum for which water quality-based effluent limits have been established in Section 5 from industrial, commercial and residential sources including consideration of the public water supply and distribution system. Also, submit for the Commissioner's review and written approval, an evaluation which determines the need to retain a consultant to perform the actions required in Sections (3) and (4) below.

(2) On or before 180 days after the date of completion of step (A)(1) above, and if determined necessary on the basis of the evaluation performed in step (A)(1) above, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. The municipality shall retain one or more qualified consultants acceptable to the Commissioner until this permit is fully complied with, and, within ten days after retaining any consultant other than the one originally identified under this paragraph, the municipality shall notify the Commissioner in writing of the identity of such other consultant. The consultant(s) retained shall be a qualified professional engineer licensed to practice in Connecticut. The Permittee shall submit to the Commissioner a description of a consultant's education, experience and training which is relevant to the work required by this permit within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

(3) On or before 365 days after the effective date of this permit, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough engineering report which describes and evaluates alternative actions to achieve compliance with the Aluminum limitations in Section 5 of this permit. Such report shall:

(a) Evaluate alternative actions to achieve compliance including but not limited to imposing additional pretreatment requirements on industrial users, modification of potable water treatment practices and operational changes to improve removal efficiencies at the Permittee facility,

(b) State in detail the most expeditious schedule for performing each alternative,

(c) List all permits and approvals required for each alternative, including but not limited to any permits required under Sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the CGS,

(d) Propose a preferred alternative or combination of alternatives with supporting justification therefore, and

(e) Propose a detailed program and schedule to perform all actions required to implement the preferred alternative, including but not limited to a schedule for submission of engineering plans and specifications for any new equipment, the start and completion of any construction activities and applying for and obtaining all permits and approvals required for such actions.

(4) Unless another deadline is specified in writing by the Commissioner, on or before 240 days after approval of the engineering report required in Section (3) above, the Permittee shall (1) submit for the Commissioner's review and written approval, contract plans and specifications for the approved remedial actions, a revised list of all permits and approvals required for such actions and a revised schedule for applying for and obtaining such permits and approvals; and (2) submit applications for all permits and approvals required under Sections 22a-430 and 22a-416 of the CGS. The Permittee shall obtain all required permits and approvals.

(B) The Permittee shall achieve the final water quality-based effluent limits for phosphorus for DSN 001-1 established in Section 5 of this permit, in accordance with the following:

(1) The permittee shall continue to comply with the interim Total Phosphorous limit identified in Table A of this permit that was instituted beginning April 1, 2014 and continuing until completion of the facility upgrade or April 1, 2020, whichever is earlier.

(2) On or before April 1, 2020, the permittee shall complete the actions approved in writing by the Commissioner under the previous permit necessary to achieve compliance with the final Total Phosphorous limits identified in Table A of this permit. Within fifteen days after completing such actions, the permittee shall certify to the Commissioner in writing that construction of the upgrade to meet the new Total Phosphorous limits as laid out in the previous permit and continued herein, is completed.

(C) 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: **1460 days** after the effective date of this permit for compliance with the final limit for Aluminum listed in Table A herein. Within fifteen days after completing such actions, the Permittee shall certify to the Commissioner in writing that the actions have been completed as approved.

(D) 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.

(E) 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.

(F) 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.

(G) 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.

(H) 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:

Ann Straut, Sanitary Engineer 3
Department of Energy and Environmental Protection
Bureau of Water Protection and Land Reuse
Water Planning and Management Division
Municipal Wastewater Section
79 Elm Street
Hartford, Connecticut 06106-5127

This permit is hereby issued on

12/4/2019

Brian P. Thompson
Acting Bureau Chief
Bureau of Water Protection and Land Reuse

ATTACHMENT 1

Tables A through G

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): **14.20 cfs**	In-stream Waste Concentration (IWC): **74.6 %**

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[4]	Sample Freq.	Sample Type		
Alkalinity	mg/l	NA	NA	NR	NA	-----	Monthly	Grab	MOR	
Aluminum, Total[6] (Interim Limit)	kg/d	18.800	40.523	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Aluminum, Total[7] (Final Limit)	kg/d	9.471	20.416	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Aluminum, Total	mg/l	NA	------	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Biochemical Oxygen Demand (5 day) [1 and 5] See remark (C) below. **May 1 through October 31**	mg/l	15	25	3/week	Daily Composite	NA	NR	NA	DMR/MOR	
Biochemical Oxygen Demand (5 day) [1 and 5] See remark (C) below. **November 1 through April 30**	mg/l	30	50	3/week	Daily Composite	NA	NR	NA	DMR/MOR	
Copper, Total	mg/l	NA	------	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Escherichia coli. May 1st through September 30th See remark (B) below.	Colonies per100 ml	NA	NA	NR	NA	410	3/week	Grab	DMR/MOR	
Flow	MGD	------	------	Continuous[3]	Average Daily Flow	NA	NR	NA	DMR/MOR	
Nickel, Total	kg/d	3.25	6.52	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Nickel, Total	mg/l	NA	------	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Nitrogen, Ammonia (total as N)										
May - October	mg/l	2	3	3/week	Daily Composite	NA	NR	NA	DMR/MOR	
November – April	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	
Nitrogen, Nitrate (total as N)	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	

Nitrogen, Nitrite (total as N)	mg/l	NA	-----	Monthly	Daily Composite	NA	NR	NA	MOR	
Nitrogen, Total Kjeldahl	mg/l	NA	-----	Monthly	Daily Composite	NA	NR	NA	MOR	
Nitrogen, Total	mg/l	NA	-----	Monthly	Daily Composite	NA	NR	NA	MOR	
Oxygen, Dissolved	mg/l	NA	NA	NR	NA	5.0	4/Work Day	Grab	DMR/MOR	
pH	S.U.	NA	NA	NR	NA	6 - 9	Work Day	Grab	DMR/MOR	
Phosphate, Ortho	mg/l	NA	-----	2/Week	Daily Composite	NA	NR	NA	MOR	
Phosphorus, Total [8 and 9] April 1st through October 31st November 1st through March 31st	mg/l mg/l	----- NA	NA -----	2/Week Monthly	Daily Composite	NA	NR	NA	DMR/MOR	*
Phosphorus, Total [10] April 1st through October 31st November 1st through March 31st	mg/l mg/l	0.28 NA	0.62 -----	2/Week Monthly	Daily Composite	NA	NR	NA	DMR/MOR	*
Phosphorus, Total [10] April 1st through October 31st November 1st through March 31st	lbs/day	----- NA	NA -----	2/Week Monthly	Daily Composite	NA	NR	NA	MOR	
Phosphorus, Total (Average Seasonal Load Cap) [11] October 31st	lbs/day	34.26	NA	Monthly	Calculated	NA	NR	NA	DMR/MOR	
Solids, Settleable	ml/l	NA	NA	NR	NA	------	Work Day	Grab	MOR	
Solids, Total Suspended [2 and 5] See remark (C) below.	mg/l	18	30	3/week	Daily Composite	NA	NR	NA	DMR/MOR	
Temperature	°F	NA	NA	NR	NA	------	Work Day	Grab	MOR	
Turbidity	NTU	NA	NA	NR	NA	------	Work Day	Grab	MOR	
UV Dose May 1st through September 30th See remark (A) below.	$mW,s/cm^2$	NA	NA	NR	NA	≥30.0	4/Work Day	Grab	DMR/MOR	
UV Transmittance May 1st through September 30th See remark (A) below.	%	NA	NA	NR	NA	------	Lowest reading of 4/Work Day	Grab	MOR	
Zinc, Total	kg/d	5.946	8.920	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Zinc, Total	mg/l	NA	-----	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*

TABLE A – CONDITIONS

Footnotes:

[1] The discharge shall not exceed an average monthly 15 mg/l (May 1 through October 31) and 30 mg/l (November 1 through April 30) effluent BOD5 or a maximum daily 25 mg/l (May 1 through October 31) and 30 mg/l (November 1 through April 30) effluent BOD5. The Maximum Daily Limit of 25.0 mg/l May 1 through October 31) and 50.0 mg/l (November 1 through April 30) BOD5 are waived during periods when the facility is treating dilute influent due to storm runoff collected by the Combined Sewer System causing influent flows to exceed 50.3 MGD. The Permittee shall state on the monthly Discharge Monitoring Reports and MOR's when exceedance is due to storm induced flows.

[2] The discharge shall not exceed an average monthly 18 mg/l or a maximum daily 30 mg/l Total Suspended Solids. The Maximum Daily Limit of 30.0 mg/l Total Suspended Solids are waived during periods when the facility is treating dilute influent due to storm runoff collected by the Combined Sewer System causing influent flows to exceed 50.3 MGD. The Permittee shall state on the monthly Discharge Monitoring Reports and MOR's when exceedance is due to storm induced flows.

[3] 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.

[4] The instantaneous limits in this column are maximum limits, except for Dissolved Oxygen and UV Dose which are minimum limits.

[5] When the influent flows exceed 50.3 MGD due to storm events the Permittee may bypass secondary biological treatment only those flows over 50.3 MGD. Those bypassed flows over 50.3 MGD shall be treated to a minimum of primary treatment and seasonal disinfection. In addition to Table A requirements, during bypass events these parameters shall be sampled daily during the event in accordance with Table A-1 below.

[6] During the period beginning at the effective date of this permit and lasting until the implementation of source controls, the discharge shall not exceed and shall otherwise conform to specific terms and conditions listed.

[7] During the period beginning after the implementation of source controls but no later than 1460 days after effective date of this permit, lasting until expiration, the discharge shall also not exceed and shall otherwise conform to the specific terms and conditions listed

[8] This interim limit became effective on October 31, 2014 and is continued until implementation of the final phosphorous limit required in footnotes 10 and 11 below but no later than March 31, 2020. For the period beginning April 1st through October 31st, in no two consecutive months shall the average monthly effluent concentration exceed 0.7 mg/l.

[9] This interim limit became effective on October 31, 2014 and is continued (seasonally) until implementation of the final phosphorus limit required in footnotes 10 and 11 below but no later than March 31, 2020. For each season (April 1st through October 31st), the seasonal average shall not exceed 0.7 mg/l. Calculate the Average Seasonal Load by adding all sample results during each April 1st through October 31st and dividing by the total number of those samples in that season.

[10] This final limit shall be effective beginning April 1, 2020, lasting until expiration of this permit.

[11] During the period beginning after the implementation of phosphorus removal but no later than April 1, 2020, lasting until expiration, the discharge shall not exceed the total Phosphorous Seasonal Load Cap of 34.26 lbs/day is determined as follows: Calculate the Average Seasonal Load by adding all sample results during each April 1st through October 31st season in pounds per day and dividing by the total number of those samples in that season.

Remarks:

(A) Ultraviolet disinfection shall be utilized from May 1st through September 30th.

(B) The geometric mean of the Escherichia coli 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 126 per 100 milliliters.

(C) The Average Weekly discharge Limitation for BOD_5 and Total Suspended Solids shall be 1.5 times the Average Monthly Limit listed above.

TABLE A-1

Discharge Serial Number: **002-1**	Monitoring Location: **5**
Wastewater Description: Primary treated, seasonally chlorinated excess combined sewer wastewater	
Monitoring Location Description: Secondary Treatment Bypass	

PARAMETER	Units	FLOW/TIME BASED MONITORING			INSTANTANEOUS MONITORING	
		Sample Frequency	Sample Type	Sample Frequency	Sample Type	Reporting form
BOD (5 day)	mg/l	Daily/event [1& 3]	Daily Composite	NA	NA	DMR/MOR
Total Residual Chlorine (TRC) (May 1st through Sept. 30th)	mg/l	NA	NA	Daily/event[1& 3]	Grab	DMR/MOR
Event Duration	Days, hours, minutes	Continuous[2]	Time	NA	NA	DMR/MOR
Escherichia coli, See Remark A	per 100 ml	NA	NA	Daily/event[1& 3]	Grab	DMR/MOR
Flow	MGD	Continuous[2]	Daily Flow	NA	NA	DMR/MOR
Solids, Total Suspended	mg/l	Daily/event [1& 3]	Daily Composite	NA	NA	DMR/MOR

TABLE A-1 - CONDITIONS

Footnotes:

[1] For overflow events exceeding one calendar day in duration, sampling shall be performed each day of the event according to the measurement frequency specified. For example, for overflow events exceeding one hour and less than 24 hours in duration, sampling shall be initiated at the start of the overflow event and terminated at the end of the overflow event and analyzed according to the measurement frequency specified. If an overflow event exceeds 24 hours, the Permittee shall take daily composite samples for BOD_5 and TSS, initiating samples at the start of the overflow event and each subsequent 24-hour period and terminating samples at the end of the overflow event. For example, on an overflow event that lasts for 54 hours, sampling would consist of 2, 24 hour samples and 1, 6 hour sample over the course of 3 days. Samples shall be flow proportional.

[2] When the influent flow to the wastewater treatment plant exceeds 50.3 MGD due to storm events, the Permittee is authorized to discharge those flows exceeding 50.3 MGD from outfall serial number 002-1, seasonally chlorine disinfected primary treated combined sewer wastewater.

[3] During short duration overflow events (less than one hour in duration) or during intermittent overflow events (with no one overflow exceeding one hour), this sampling requirement is waived.

Remarks - Apply to all of Table A-1:

(A) The Permittee is required to calculate combined effluent characteristics for BOD_5, TSS, TRC, and Escherichia coli, using the overflow event primary effluent sampling data, and the secondary effluent sampling data collected during the overflow. Calculations for composite samples shall be flow weighted using total daily flows. These calculations, supporting data and the resulting data shall be submitted as an addendum to the DMR and MOR.

(B) The Permittee shall make reasonable efforts to maximize the amount of flow receiving final secondary treatment consistent with achieving NPDES effluent limits at the final secondary effluent discharge as described in the Permit.

(C) Please continue to report Permitted Bypass of the Secondary Treatment events utilizing the electronic reporting system.

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): **14.20 cfs**		In-stream Waste Concentration (IWC): **74.6 %**			
PARAMETER	**Units**	**FLOW/TIME BASED MONITORING**			**REPORT FORM**
		Average Monthly Minimum	**Sample Freq.**	**Sample type**	
Biochemical Oxygen Demand (5 day) Percent Removal [1 & 3]	% of Influent	85	3/Week	Calculated [2]	DMR
Solids, Total Suspended Percent Removal [1 & 3]	% of Influent	85	3/Week	Calculated [2]	DMR

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). The 15% provision is waived during periods when the facility is treating dilute influent due to storm runoff collected by the Combined Sewer System causing influent flows to exceed 50.3 MGD. The Permittee shall state on the monthly Discharge Monitoring Reports and MOR's when exceedance of the 15% provision is due to storm induced flows.

[2] Calculated based on the average monthly results described in Table A. Removal efficiency $= \frac{\text{Inf.BOD or TSS} - \text{Effluent BOD or TSS}}{\text{Inf.BOD or TSS}} \times 100$

[3] When the influent flows exceed 50.3 MGD due to storm events the Permittee may bypass secondary biological treatment. During bypass events these parameters shall be sampled daily during the event. During short duration bypass events (less than one hour in duration) or during intermittent bypass events (with no one bypass exceeding one hour), this sampling requirement is waived. For bypass events exceeding one hour and less than 24 hours in duration, sampling shall be performed each day of the event according to the measurement frequency specified. If a bypass event covers all or part of three calendar days, the Permittee shall take three daily composite samples for BOD_5 and TSS, initiating samples at the start of the bypass event and each subsequent calendar day and terminating samples at the end of the calendar day or at the end of the bypass event. Samples shall be flow proportional.

TABLE C

Discharge Serial Number (DSN): **001-1**				Monitoring Location: **T**		
Wastewater Description: **Sanitary Sewage**						
Monitoring Location Description: **Final Effluent**						
Allocated Zone of Influence (ZOI): **14.20 cfs**			In-stream Waste Concentration (IWC): **74.6 %**			
PARAMETER	**Units**	**Maximum Daily Limit**	**Sampling Frequency**	**Sample Type**	**Reporting form**	**Minimum Level Analysis See Section 6**
Aluminum, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Antimony, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
NOAEL Static 48Hr Acute D. Pulex[1]	% survival	≥90%	Quarterly	Daily Composite	ATMR/DMR	
NOAEL Static 48Hr Acute Pimephales[1]	% survival	≥90%	Quarterly	Daily Composite	ATMR/DMR	
Arsenic, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Beryllium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
BOD_5	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Cadmium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Chromium, Hexavalent	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Chromium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Chlorine, Total Residual	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Copper, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Cyanide, Amenable	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Cyanide, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Iron, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Lead, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Mercury, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Nickel, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Nitrogen, Ammonia (total as N)	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Nitrogen, Nitrate, (total as N)	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Nitrogen, Nitrite, (total as N)	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Phenols, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Phosphorus, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Selenium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Silver, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Suspended Solids, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Thallium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Zinc, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*

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 C-1

Discharge Serial Number (DSN): **002-1**				Monitoring Location: **T**		
Wastewater Description: Primary treated, seasonally chlorinated excess combined sewer wastewater						
Monitoring Location Description: **Supplemental Treatment Facility Effluent Prior to Chlorination**						
PARAMETER	**Units**	**Maximum Daily Limit**	**Sampling Frequency**	**Sample Type**	**Reporting form**	**Minimum Level Analysis See Section 6**
Aluminum, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Antimony, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Aquatic Toxicity, *Daphnia pulex* [1]	%	------	Semiannual	Daily Composite	ATMR	
Aquatic Toxicity, *Pimephales promelas* [1]	%	------	Semiannual	Daily Composite	ATMR	
Arsenic, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Beryllium, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Cadmium, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Chromium, Hexavalent	mg/l	------	Semiannual	Daily Composite	ATMR	
Chromium, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Chlorine, Total Residual	mg/l	------	Semiannual	Daily Composite	ATMR	*
Copper, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Cyanide, Amenable	mg/l	------	Semiannual	Daily Composite	ATMR	*
Cyanide, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Iron, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Lead, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Mercury, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Nickel, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Nitrogen, Ammonia (total as N)	mg/l	------	Semiannual	Daily Composite	ATMR	
Nitrogen, Nitrate, (total as N)	mg/l	------	Semiannual	Daily Composite	ATMR	
Nitrogen, Nitrite, (total as N)	mg/l	------	Semiannual	Daily Composite	ATMR	
Phenols, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Phosphorus, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Selenium, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Silver, Total	mg/l	------	Semiannual	Daily Composite	ATMR	*
Thallium, Total	mg/l	------	Semiannual	Daily Composite	ATMR	
Zinc, Total	mg/l	------	Semiannual	Daily Composite	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 Aeration 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	
Aluminum, Total	kg/d	Monthly average and maximum day	W	Daily Composite	NA	NA	DMR/MOR
Biochemical Oxygen Demand (5 day)	mg/l	Monthly average	3/Week	Daily Composite	NA	NA	DMR/MOR
Nitrogen, Ammonia (total as N)	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Nitrate (total as N)	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Nitrite (total as N)	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Total Kjeldahl	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Total	mg/l		Monthly	Daily Composite	NA	NA	MOR
Phosphate, Ortho	mg/l		Monthly	Daily Composite	NA	NA	MOR
Phosphorus, Total	mg/l		Monthly	Daily Composite	NA	NA	MOR
pH	S.U.		NA	NA	Work Day	Grab	MOR
Solids, Total Suspended	mg/l	Monthly average	3/Week	Daily Composite	NA	NA	DMR/MOR
Temperature	°F		NA	NA	Work Day	Grab	MOR

TABLE F

Discharge Serial Number: **001-1**					Monitoring Location: **P**		
Wastewater Description: **Primary Effluent**							
Monitoring Location Description: **Primary Sedimentation Basin Effluent**							
PARAMETER	**Units**	**REPORTING FORMAT**	**TIME/FLOW BASED MONITORING**		**INSTANTANEOUS MONITORING**		**REPORTING FORM**
			Sample Frequency	**Sample Type**	**Sample Frequency**	**Sample type**	
Alkalinity, Total	mg/l		NA	NA	Monthly	Grab	MOR
Biochemical Oxygen Demand (5 day)	mg/l	Monthly average	Weekly	Composite	NA	NA	MOR
Nitrogen, Ammonia (total as N)	mg/l		Monthly	Composite	NA	NA	MOR
Nitrogen, Nitrate (total as N)	mg/l		Monthly	Composite	NA	NA	MOR
Nitrogen, Nitrite (total as N)	mg/l		Monthly	Composite	NA	NA	MOR
Nitrogen, Total Kjeldahl	mg/l		Monthly	Composite	NA	NA	MOR
Nitrogen, Total	mg/l		Monthly	Composite	NA	NA	MOR
pH	S.U.		NA	NA	Monthly	Grab	MOR
Solids, Total Suspended	mg/l	Monthly average	Weekly	Composite	NA	NA	MOR

TABLE G

Discharge Serial Number: **001-1**	Monitoring Location: **SL**		
Wastewater Description: **Thickened Sludge**			
Monitoring Location Description: **Dedicated sludge tank discharge**			
PARAMETER	**INSTANTANEOUS MONITORING**		**REPORTING FORM**
	Units	**Grab Sample Freq.**	
Arsenic, Total	mg/kg	Bi-monthly	DMR
Beryllium, Total	mg/kg	Bi-monthly	DMR
Cadmium, Total	mg/kg	Bi-monthly	DMR
Chromium, Total	mg/kg	Bi-monthly	DMR
Copper, Total	mg/kg	Bi-monthly	DMR
Lead, Total	mg/kg	Bi-monthly	DMR
Mercury, Total	mg/kg	Bi-monthly	DMR
Nickel, Total	mg/kg	Bi-monthly	DMR
Nitrogen, Ammonia *	mg/kg	Bi-monthly	DMR*
Nitrogen, Nitrate (total as N) *	mg/kg	Bi-monthly	DMR*
Nitrogen, Organic *	mg/kg	Bi-monthly	DMR*
Nitrogen, Nitrite (total as N) *	mg/kg	Bi-monthly	DMR*
Nitrogen, Total *	mg/kg	Bi-monthly	DMR*
pH *	S.U.	Bi-monthly	DMR*
Polychlorinated Biphenyls	mg/kg	Bi-monthly	DMR
Solids, Fixed	%	Bi-monthly	DMR
Solids, Total	%	Bi-monthly	DMR
Solids, Volatile	%	Bi-monthly	DMR
Zinc, Total	mg/kg	Bi-monthly	DMR

(*) 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.

ATTACHMENT 2

MONTHLY OPERATING REPORT FORM

DATA TRACKING AND TECHNICAL FACT SHEET

PERMITTEE: City of Waterbury

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #: CT0100625 **APPLICATION #:** 201809987 **FACILITY ID.** 151-001

Mailing Address:	Location Address:
Street: 210 Municipal Road	Street: 210 Municipal Road
City: Waterbury ST: CT Zip: 06708	City: Waterbury ST: CT Zip: 06708
Contact Name: Christian Perez	Contact Name: John Ahern
Phone No.: (203) 695-9063	Phone No.: (203) 613-8233
Email: cperez@waterburyct.org	DMR Contact email address: johnahern1@jacobs.com

PERMIT INFORMATION

DURATION 5 YEAR X 10 YEAR ___ 30 YEAR ___

TYPE New ___ Reissuance X Modification ___

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

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

NPDES MAJOR **(MA)** X
NPDES SIGNIFICANT MINOR or PRETREAT SIU **(SI)** ___
NPDES or PRETREATMENT MINOR **(MI)** ___

COMPLIANCE SCHEDULE YES X NO ___
POLLUTION PREVENTION ___ TREATMENT REQUIREMENT ___
WATER QUALITY REQUIREMENT X OTHER ___

OWNERSHIP CODE
Private ___ Federal ___ State ___ Municipal (town only) X Other public ___

DEEP STAFF ENGINEER Ann A. Straut, SE3 **DATE DRAFTED:** 10/17/2018

PERMIT FEES

Discharge Code	DSN Number	Annual Fee
111000f	001-1	$3,320.00

APPLICATION FEE PAID on 8/6/2018

PROCESSING FEE PAID on 9/3/19

ANNUAL FEE PAID on 6/17/19

PUBLIC NOTICE
Date of Public Notice: *10/21/19*

Date Permit Cleared Public Notice: *11/20/19*

Date Public Notice Fees Paid: *11/18/19*

FOR NPDES DISCHARGES
Drainage Basin Code: 6900 Water Quality Classification Goal: B Segment: Naugatuck River - 02

NATURE OF BUSINESS GENERATING DISCHARGE
Municipal Sanitary Sewage Treatment

PROCESS AND TREATMENT DESCRIPTION (by DSN)
001-01: Biological treatment with nitrogen removal and seasonal UV disinfection
002-1: Screening, grit removal and chlorine disinfection

RESOURCES USED TO DRAFT PERMIT

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

__ *Performance Standards*

__ *Federal Development Document*
name of category

_X_ *Department File Information*

_X_ *Connecticut Water Quality Standards*

_X_ *Anti-degradation Policy*

__ *Coastal Management Consistency Review Form*

__ *Other - Explain*

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

_X_ *Secondary Treatment (Section 22a-430-4(r) of the Regulations of Connecticut State Agencies)*

__ *Case-by-Case Determination (See Other Comments)*

_X_ *In order to meet in-stream water quality (See General Comments)*

__ *Anti-degradation policy*

GENERAL COMMENTS
The City of Waterbury ("Permittee") operates a municipal water pollution control facility ("the facility") located at 210 Municipal Road, Waterbury, CT. The facility is designed to treat and discharge up to 27.05 million gallons a day of effluent into the Naugatuck River. The facility currently uses secondary treatment with denitrification and UV disinfection to treat effluent before being discharged. Pursuant to Conn. Gen. Stat. § 22a-430, the Department of Energy and Environmental Protection has issued the City of Waterbury a permit for the discharge from this facility. The City of Waterbury has submitted an application to renew its permit. The Department has made a tentative determination to approve the City of Waterbury's application and has prepared a draft permit consistent with that determination.

The most significant changes from the current permit are the removal of the copper limit based on a five year review of data, the inclusion of an aluminum limit and steps for compliance,
and the inclusion of an ultraviolet light disinfection (dose) limit. The draft permit will continue the inclusion of iron monitoring to be consistent with EPA's National Recommended Water Quality Criteria.

SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC NOTICE PERIOD AND THE DEPARTMENT'S RESPONSES

X *The Department has received no written comments on the proposed action. (REVIEW BY MANAGEMENT ONLY)*

☐ *Staff has reviewed the written comments and responded to the comments, no significant permit changes have been made. (REVIEW BY SUPERVISOR AND MANAGEMENT ONLY)*

☐ *The Department has received and Staff has reviewed written comments on the proposed action and made significant changes as follows: (ADD COMMENTS, RESPONSES AND PERMIT CHANGES) (REVIEW BY PERMIT STAFF, SUPERVISOR AND MANAGEMENT)*

SPECIFIC REQUIREMENTS OR REVISIONS

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.

The need for inclusion of water quality based discharge limitations in this permit was evaluated consistent with Connecticut Water Quality Standards and criteria, pursuant to 40 CFR 122.44(d). Discharge monitoring data was evaluated for consistency with the available aquatic life criteria (acute and chronic) and human health (fish consumption only) criteria, considering the zone of influence allocated to the facility where appropriate. In addition to this review, the statistical procedures outlined in the EPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) were employed to calculate the need for such limits. Comparison of the attached monitoring data and its inherent variability with the calculated water quality based limits indicates a statistical probability of exceeding such limits. Therefore, water quality based limits for copper, nickel and zinc were included in the permit at this time.

A compliance schedule for the reduction of phosphorus in the effluent is continued:

Phosphorus Permitting Approach

Phosphorus is a naturally occurring element that is essential to support plant growth. When present in excessive amounts, phosphorus can impair both aquatic life and recreational use of Connecticut's water resources. Excess nutrient enrichment is a serious threat to water quality in Connecticut. Excessive loading of phosphorus to surface waters as a result of discharges from wastewater treatment plants or non point sources such as runoff from urban and agricultural lands, can lead to algal blooms, including blooms of noxious blue green algae, reduction in water clarity, and in extreme cases depletion of oxygen, fish kills, and other impairments to aquatic life. Currently, 21 water body segments have been identified on Connecticut's List of Waters Not Meeting Water Quality Standards where nutrient enrichment is a contributing cause of the impairment.

The Connecticut Water Quality Standards (WQS) do not include numeric criteria for nutrients but rather incorporate narrative standards and criteria for nutrients. These narrative policy statements direct the Connecticut Department of Environmental Protection to impose discharge limitations or other reasonable controls on point and non point sources to support maintenance or attainment of designated uses. In the absence of numeric criteria for phosphorus, the Department has developed an interim nutrient management strategy for freshwater non-tidal streams based on the narrative policy statements in the WQS to meet the pressing need to issue NPDES permits and be protective of the environment. The strategy includes methods that focus on phosphorus because it is the primary limiting nutrient in freshwater systems. These methods were approved by the United States Environmental Protection (EPA) in their letter dated October 26, 2010 as an interim strategy to establish water quality based phosphorus limits in non-tidal freshwater for industrial and municipal water pollution control facilities (WPCFs) national pollutant discharge elimination system (NPDES) permits.

The method in the interim strategy uses best available science to identify phosphorus enrichment levels in waste receiving rivers and streams that adequately support aquatic life uses. The methodology focuses on algal communities as the key aquatic life nutrient response variable and phosphorus enrichment factors that represent significant changes in communities based on data collected statewide. Ongoing work is currently being conducted to refine the approach through additional data collection and by expanding the methodology to include non-waste receiving streams. It is expected that the ongoing work will lead to numeric nutrient criteria for all freshwater rivers and streams in the next

WQS review cycle. The current approach provides for a major statewide advancement in the level of phosphorus control that is expected to meet all freshwater designated uses. The adaptive nature of Connecticut's strategy allows for revisions to permit limits in future permit cycles without delaying action that we know needs to be taken today.

The current approach follows a watershed based framework incorporating many of the elements from the U.S. EPA Watershed –Based National Pollutant Discharge Elimination System (NPDES) Permitting Technical Guidance (2007). Consistent with the 2007 Guidance, the approach "explicitly considers the impact of multiple pollutant sources and stressors, including nonpoint source contributions, when developing point source permits". Expected current conditions are based on the probability of excess phosphorus export from land cover and municipal and industrial facilities in the upstream drainage basin. Connecticut's policy for phosphorus management is translated into a numeric expression through geo-spatial and statistical analyses that determines the maximum acceptable seasonal phosphorus mass load per unit area of watershed contributing flow to the point of assessment.

The goal of the interim strategy is to achieve or maintain an enrichment factor (EF) of 8.4 or below throughout a watershed. An EF is representative of the amount of anthropogenic phosphorus loading to river and streams. It is calculated by dividing the current total seasonal phosphorus load by a modeled total phosphorus load under complete forested conditions at a particular point along the river. An enrichment factor is representative of the amount of anthropogenic phosphorus loading to rivers and streams. The goal of an 8.4 enrichment factor represents a threshold at which a significant change is seen in the algal communities indicating highly enriched conditions and impacts to aquatic life uses.

The analysis was conducted using benthic algae collected in rivers and streams throughout CT under varying enrichment conditions. The approach targets the critical 'growing' season (April through October) when phosphorus is more likely to be taken up by sediment and biomass because of low flow and warmer conditions. During winter months aquatic plants are dormant and flows are higher providing constant flushing of phosphorus through aquatic systems with a less likely chance that it will settle out into the sediment. Limiting the phosphorus export from industrial and municipal facilities offers a targeted management strategy for achieving aquatic life designated uses within a waterbody. The export of some phosphorus from facilities and other land sources is considered normal use of the land recognizing that humans are part of the environment.

A seasonal load was established by the Department for each facility discharging to non-tidal waters based on the current degree of enrichment of the receiving water body at the point of discharge and the facilities contribution to the total watershed enrichment at the point of discharge.

Waterbury WPCF's Permit Requirements
A nutrient watershed analysis was conducted for the Naugatuck River watershed below facilities discharging phosphorus into the river. The facilities discharging to the river include: Torrington WPCF, Thomaston WPCF, Waterbury WPCF, Naugatuck WPCF, Beacon Falls WPCF, Seymour WPCF, and Ansonia WPCF. The seasonal (April 1st through October 31st) nutrient loading from each facility discharging to the watershed was reduced to achieve an enrichment factor of 8.4 or lower throughout the river.

The current enrichment factor at the Waterbury WPCF discharge is 49. The final proposed seasonal load allocation for the Waterbury WPCF is 34.26 lbs/day. This load equates to a proposed treatment performance level of 0.2 mg/L multiplied by the average seasonal flow of 20.52 MGD. When this strategy is fully implemented by combining reductions at all facilities located in the same watershed, the NPDES load in the Naugatuck River will be reduced by 77.81 %.

Federal regulations at 40 CFR 122.44(d) indicate that permit issuers are required to determine whether a given point source discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard after consideration of existing controls on point and non-point sources of pollution. If a discharge is found to cause an excursion of a numeric or narrative state water quality criterion, NPDES regulations implementing section 301(b)(1)(C) of the Clean Water Act provide that a permit must contain effluent limits as necessary to achieve state water quality standards. The limit in the permit and the strategy are consistent with the narrative policy statements in the CT WQS and are expected to result in the attainment and maintenance of all designated uses for the water body when the strategy is fully implemented. If the Department develops numeric criteria in the future, or it is found that the current limit under the strategy is not sufficient to achieve

designated uses, the goal will be modified and the WPCF will be expected to meet the more stringent water quality goal.

Translating the average performance level of 34.26 lbs/day into enforceable permit limits requires consideration of effluent variability and frequency of monitoring in order to comply with federal permitting regulations. The procedure used is as follows:

1. Consider the proposed treatment performance level (0.2 mg/L) to be equivalent to the Long Term Average (LTA)

2. Calculate the Maximum Daily Limit by multiplying the LTA by the 99th percentile LTA Multiplier appearing in Table 5-2 of the Technical Support Document (page 103 of EPA/505/2-90-001) corresponding to a CV of 0.6% to account for effluent variability:

*Maximum Daily Limit: 0.2 mg/L * 3.11 = 0.622 mg/L*

3. Calculate the Average Monthly Limit by multiplying the LTA by the 95th percentile LTA Multiplier appearing in Table 5-2 of the Technical Support Document corresponding to a CV of 0.6% to account for effluent variability and either n=4 samples/month or n=10 samples/month as appropriate for the facility to account for the precision of estimating the true monthly average based on an average for the days the effluent was sampled:

Average Monthly Limit: 0.622 mg/l X 1.38 = 0.858 mg/l

Summary of Limits for Waterbury WPCF:
Average Daily Load = 34.26 lbs/day
Total Seasonal Load = (34.26 lbs/day * 214 Days/Season) = 7,322 lbs
Maximum Daily Limit = 0.622 mg/L
Average Monthly Limit = 0.858 mg/L]

With respect to the foregoing summary of limits, it should be noted that compliance with the Maximum Daily Limit or the Average Monthly Limit during the time the seasonal load limit is calculated will not ensure compliance with the Total Seasonal Load limit. For example, if the Permittee discharged phosphorus at the maximum permitted by either the Maximum Daily Limit or the Average Monthly Limit throughout the time that the seasonal load is calculated, the Permittee would exceed the Total Seasonal Load limit. For this reason, the Permittee must monitor compliance with the Total Seasonal Load limit independent of its compliance with the Maximum Daily Limit and the Average Monthly Limit.]

WATER QUALITY LIMIT CALCULATIONS
See attached

Waterbury

Sample month/year:

Permit Expiration date:

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Chief Plant Operator:

Phone:

Date Received By DEEP:

	Daily Flow			Secondary Bypass											Primary Sludge			Aeration Tank #1				Aeration Tank #2				Aeration Tank #3			
	Max.	Min.	Total	Event Duration		BOD5	TSS	FLOW	E-Coli	Chlorine Dose		Chlorine Residual			FLOW		Weight	MLSS	SVI	D.O.		MLSS	SVI	D.O.		MLSS	SVI	D.O.	
Units	mgd			start	stop					May - Sept		May - Sept				Avg %		mg/l	--	mg/l		mg/l	--	mg/l		mg/l	--	mg/l	
Freq	daily			Date & Time		mg/l	mg/l	MGD	#100ml	lbs	mg/l	high	low	average	MGD	TS Feed Solids	Dry Tons	work day		high	low	work day		high	low	work day		high	low
				daily when bypassing											workday			work day		4/workday		work day		4/workday		work day		4/workday	
1																													
2																													
3																													
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29																													
30																													
31																													
MIN																													
MAX																													
AVG																													
SUM																													
Geo Mean																													

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	Aeration Tank #4				Return Sludge		Waste	Waste In		BOD (5-day)				Suspended Solids						Settleable	Turbidity	UV Dose		UV Transmittance		E. Coli
					Aeration basin RAS		sludge	Septage	Industrial	Inf.	Prim. Eff.	Final Eff.	Removal	Inf.	Prim. Eff.	Final Eff.	Removal	Inf	Final Eff.	Solids		(May - Sept)		(May - Sept)		
	MLSS	SVI	D.O.		%	%	Waste													Final Eff.	Final Eff.	High	Low	Lowest Reading		Final Eff.
Units	mg/l	–	mg/l		flow	solids	dry tons	gal		mg/l			%	mg/l			%	DT/d		ml/l	NTU	mW_Sec/cm2		%		#/100 ml
Freq	work day		high	low	work day		work day			3/week	Weekly	3/week		3/week	Weekly	3/week	3/week	3/week		work day	work day	4 per workday		workday		
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	Ammonia				Nitrate			Nitrite			TKN			Total N							D.O.	pH			Alkalinity		
	Inf.	Prim. Eff.	Final Eff.	Rem	Inf.	Prim. Eff.	Final Eff.	Inf.	Prim. Eff.	Final Eff.	Inf.	Prim. Eff.	Final Eff.	Inf.	Prim. Eff.	Final Eff.	Inf.	Prim. Eff.	Final Eff.	Rem.	Final Eff.	Inf.	Primary Eff.	Final Eff.	Inf.	Prim. Eff.	Final Eff.
Units	mg/l			%	mg/l			mg/l			mg/l			mg/l			lbs/d			%	mg/l	S.U.			mg/l		
Freq	Monthly		3/week May - Oct Monthly Nov - Apr		Monthly			Monthly			Monthly			Eff. Total N parameteres 2x / week for N permit ALL YEAR NOT REPORTED ON MOR Monthly							Lowest 4/work day	workday	Monthly	workday	Monthly		
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	Ortho P				Total P				Temp.		Aluminum			Nickel		Zinc		Copper	Dewatering		
	Inf.		Final Eff.		Inf.		Final Eff.		Inf.	Final Eff.	Final Eff		Influent	Final Eff		Final Eff		Final Eff.	Wet	Total Solids	Dry
Units	mg/l	lbs/d	mg/l	lbs/d	mg/l	lbs/d	mg/l	lbs/d	°F		mg/l	kg/d	kg/d	mg/l	kg/d	mg/l	kg/d	mg/l	Tons	%	Tons
Freq	Monthly (Apr - Oct)		2/Week (Apr-Oct)		Monthly (Apr - Oct)		2/Week (Apr-Oct)		3TH workday		Weekly		Max day & Monthly avg	Weekly		Weekly			Daily		
	Monthly (Nov-Mar)				Monthly (Nov-Mar)																
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Sludge Disposal Location:

Please return forms to:

DEP - Water Management
ATTN: Municipal Wastewater Monitoring Coordinator
Municipal Facilities
79 Elm Street
Hartford, CT 06106-5127

Statement of Acknowledgement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Authorized Official:

Title:

Signature: _____

Date: _____

WQB LIMITS:

Discharger:	Waterbury WPCF				by: Strauta, 5/21/2019, 10:01
Receiving Water:	Naugatuck River		CURRENT CONDITIONS		
Design Flow:	27.050	MGD	Avg. Flow:	23.800	MGD
Allocated ZOI:	14.20	CFS	Max. Flow:	44.300	MGD
Samples/Month:	4		IWC:	74.68	%

WQB Limits - **Site Specific**

Compound	C.V.	AML ug/l	MDL ug/l	AML kg/d	MDL kg/d	LIMIT? ML?
Aluminum	0.7	9.24E+01	1.99E+02	9.47E+00	2.04E+01	LIMIT/ML
Ammonia	2.3	1.02E+03	3.22E+03	1.05E+02	3.30E+02	LIMIT/ML
Antimony	1.4	1.66E+02	4.69E+02	1.70E+01	4.80E+01	
Arsenic	0.0	2.10E-02	2.10E-02	2.15E-03	2.15E-03	ML
Beryllium	0.0	4.82E+00	4.82E+00	4.94E-01	4.94E-01	
Cadmium	0.2	1.56E-01	2.07E-01	1.60E-02	2.12E-02	ML
Chlorine	0.6	1.21E+01	2.42E+01	1.24E+00	2.48E+00	
Chromium (hex)	0.0	1.47E+01	1.47E+01	1.51E+00	1.51E+00	
Chromium (tri)	0.8	4.33E+01	9.91E+01	4.43E+00	1.02E+01	
Copper	0.7	2.42E+01	5.23E+01	2.48E+00	5.35E+00	
Cyanide (amen)	0.0	6.96E+00	6.96E+00	7.14E-01	7.14E-01	
Lead	0.0	1.61E+00	1.61E+00	1.65E-01	1.65E-01	ML
Mercury	0.0	6.83E-02	6.83E-02	7.00E-03	7.00E-03	ML
Nickel	0.6	3.17E+01	6.36E+01	3.25E+00	6.51E+00	LIMIT/ML
Phenol	0.0	2.14E+02	2.14E+02	2.20E+01	2.20E+01	
Selenium	0.3	6.05E+00	9.07E+00	6.20E-01	9.30E-01	ML
Silver	3.0	4.19E-01	1.37E+00	4.29E-02	1.40E-01	ML
Thallium	0.4	6.43E-01	1.08E+00	6.59E-02	1.10E-01	ML
Zinc	0.3	5.80E+01	8.71E+01	5.95E+00	8.92E+00	LIMIT/ML

Current Conditions

Compound	# DETECTS	AMC ug/l	MMC ug/l	AMM kg/d	MMM kg/d
Aluminum	13	1.26E+02	3.30E+02	1.14E+01	5.54E+01
Ammonia	14	7.00E+02	7.11E+03	6.31E+01	1.19E+03
Antimony	2	2.42E+01	1.00E+02	2.18E+00	1.68E+01
Arsenic	0	5.00E+00	5.00E+00	4.51E-01	8.39E-01
Beryllium	0	1.00E+00	1.00E+00	9.02E-02	1.68E-01
Cadmium	1	5.00E-01	1.00E+00	4.51E-02	1.68E-01
Chlorine				0.00E+00	0.00E+00
Chromium (hex)	0	1.00E+01	1.00E+01	9.02E-01	1.68E+00
Chromium (tri)	0	8.20E+00	2.00E+01	7.39E-01	3.36E+00
Copper	16	6.30E+00	1.90E+01	5.68E-01	3.19E+00
Cyanide (amen)	0	5.00E+00	5.00E+00	4.51E-01	8.39E-01
Lead	0	5.00E+00	5.00E+00	4.51E-01	8.39E-01
Mercury	1	2.00E-01	2.00E-01	1.80E-02	3.36E-02
Nickel	17	3.01E+01	7.10E+01	2.71E+00	1.19E+01
Phenol	0	5.00E+01	5.00E+01	4.51E+00	8.39E+00
Selenium	1	5.10E+00	1.00E+01	4.60E-01	1.68E+00
Silver	2	3.10E+00	4.10E+01	2.79E-01	6.88E+00
Thallium	1	7.70E+00	1.00E+01	6.94E-01	1.68E+00
Zinc	19	4.88E+01	8.00E+01	4.40E+00	1.34E+01

Final WQB Limits

	AML (kg/d)	MDL (kg/d)
Aluminum	9.471	20.416
Ammonia	105.023	330.375
Nickel	3.247	6.515
Zinc	5.946	8.920

Interim WQB Limits

	AML (kg/d)	MDL (kg/d)
Aluminum	18.800	40.523
Ammonia	187.311	589.235
Nickel	4.209	8.445

Minimum Levels

Aluminum	0.010 mg/L
Ammonia	
Arsenic	0.005 mg/L
Cadmium	0.0005 mg/L
Lead	0.005 mg/L
Mercury	0.0002 mg/L
Nickel	0.005 mg/L
Selenium	0.005 mg/L
Silver	0.002 mg/L
Thallium	0.005 mg/L
Zinc	0.020 mg/L

Date	BOD	TSS	NH3	NO2	NO3	CNt	CNa	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	Al	P	Fe
5/8/2018	< 2.00	4.50	0.14	< 0.030	3.51	< 5.0	< 5.0	< 1.0	< 5.0	1.0	< 10.0	< 5.0	9.0	< 5.0	< 5.0	71.0	< 1.0	60.0	< 10.0	< 10.0	< 50.0	< 0.2	260.0	0.2	50.0
8/1/2018	< 2.00	7.00	0.11	< 0.030	3.00	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	6.0	< 5.0	< 5.0	39.0	1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2	120.0	0.2	20.0
11/13/2018	3.70	1.50	0.29	< 0.030	3.77	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	9.0	< 5.0	< 5.0	51.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2	110.0	1.6	40.0
2/12/2019	3.90	2.00	7.11	< 0.030	1.27	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	9.0	< 5.0	< 5.0	52.0	< 1.0	60.0	< 10.0	< 5.0	< 50.0	< 0.2	40.0	1.8	40.0

Text334: 725

	BOD	TSS	NH3	NO2	NO3	CNt	CNa	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	Al	P	Fe
Count	16	15	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	14	14	16
# Detected	10	10	14	0	19	0	0	0	0	1	0	0	16	0	1	17	2	19	2	1	0	1	13	14	13
Average	3.37	2.80	0.70	0.030	2.35	5.0	5.0	1.0	5.0	0.5	10.0	8.2	6.3	5.0	7.7	30.1	3.1	48.8	24.2	5.1	50.0	0.2	126.4	1.1	46.2
Maximum	13.50	7.50	7.11	0.030	4.83	5.0	5.0	1.0	5.0	1.0	10.0	20.0	19.0	5.0	10.0	71.0	41.0	80.0	100.0	10.0	50.0	0.2	330.0	2.8	109.0
CV	1.0	0.8	2.3	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.8	0.7	0.0	0.4	0.6	3.0	0.3	1.4	0.3	0.0	0.0	0.7	0.8	0.5

Bold => mg/L Normal => ug/L

Effluent Chemistry: WATERBURY WPCF

as of Tuesday, May 21, 2019 | Design Flow 27 MGD | Avg. Monthly Flow : MGD | Max. Monthly Flow : MGD

Receiving Waterbody: Naugatuck River
Allocated ZOI: 14.2 cfs
Database IWC: 74.6% Site Specific

Date	BOD	TSS	NH3	NO2	NO3	CNt	CNa	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	Al	P	Fe
8/4/2014			< 0.10	< 0.030	1.50	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	<20.0	< 2.0	< 5.0	< 10.0	25.0	< 1.0	20.0	<100.0	< 5.0	< 50.0	< 0.2			
11/3/2014			0.13	< 0.030	1.20	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	<20.0	3.0	< 5.0	< 10.0	40.0	< 1.0	30.0	<100.0	< 5.0	< 50.0	< 0.2			<
2/2/2015			0.22	< 0.030	1.80	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	<20.0	19.0	< 5.0	< 10.0	20.0	< 1.0	40.0	<100.0	< 5.0	< 50.0	< 0.2			<
5/4/2015	1.40		0.27	< 0.030	2.10	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	<20.0	< 2.0	< 5.0	< 10.0	20.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			70.0
8/4/2015	3.90	7.50	1.08	< 0.030	2.40	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	3.0	< 5.0	< 10.0	16.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			70.0
11/9/2015	1.30	2.50	< 0.10	< 0.030	1.52	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	5.0	< 5.0	< 10.0	< 5.0	< 1.0	48.0	< 10.0	< 5.0	< 50.0	< 0.2	< 10.0	1.6	109.0
2/2/2016 <	1.00	2.50	0.46	< 0.030	1.57	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	4.0	< 5.0	< 3.0	14.0	< 1.0	60.0	< 10.0	< 3.0	< 50.0	< 0.2	50.0	2.8	50.0
5/2/2016	8.40	< 1.00	0.55	< 0.030	1.85	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	3.0	< 5.0	< 3.0	< 5.0	< 1.0	60.0	< 10.0	4.0	< 50.0	< 0.2	330.0	0.2	20.0
8/15/2016	13.50	< 1.00	< 0.10	< 0.030	1.84	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	3.0	< 5.0	< 5.0	30.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2	190.0	0.2	30.0
11/2/2016	1.80	1.50	1.07	< 0.030	1.95	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	50.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2	130.0	1.0	< 20.0
2/15/2017	1.40	< 1.00	< 0.10	< 0.030	4.83	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	8.0	< 5.0	< 10.0	20.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2	100.0	2.4	50.0
5/9/2017 <	1.00	< 1.00	0.37	< 0.030	2.12	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	4.0	< 5.0	< 10.0	14.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	0.2	220.0	0.1	50.0
8/21/2017 <	4.00	4.00	< 0.10	< 0.030	3.36	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	4.0	< 5.0	< 10.0	28.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2	110.0	0.2	50.0
11/7/2017 <	2.00	4.00	0.27	< 0.030	2.47	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	11.0	< 5.0	< 5.0	42.0	< 1.0	50.0	10.0	< 5.0	< 50.0	< 0.2	60.0	1.9	20.0
2/13/2018	2.60	< 1.00	0.67	< 0.030	2.57	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	14.0	< 5.0	10.0	30.0	41.0	70.0	10.0	< 5.0	< 50.0	< 0.2	40.0	1.6	50.0