

NPDES PERMIT/STATE PERMIT

issued to

The Connecticut Water Company
93 West Main Street
Clinton, CT 06413-1600

Location Address:
10 Snipsic Street
Vernon, CT 06066

Facility ID: 146-023

Permit ID: CT0030341 and SP0002428

Receiving Stream: Shenipsit Lake

Permit Expires: May 27, 2014

SECTION 1: GENERAL PROVISIONS

- (A) This permit is issued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and section 402(b) of the Clean Water Act, as amended, 33 USC 1251, et. seq., and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer an N.P.D.E.S. permit program.
- (B) **The Connecticut Water Company**, ("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.

Section 22a-430-3 General Conditions

- (a) Definitions
- (b) General
- (c) Inspection and Entry
- (d) Effect of a Permit
- (e) Duty
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- (a) Duty to Apply
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- (l) Establishing Effluent Limitations and Conditions
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- (s) Treatment Requirements for Metals and Cyanide
- (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 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 authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Environmental Protection ("Commissioner"). To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.
- (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 Regulations of Connecticut State Agencies.

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 "No Observable Acute Effect Level (NOAEL)" which is redefined below.

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

"----" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the DMR.

"Annual" in the context of a sampling frequency, means the sample must be collected when the discharge occurs in the month specified in the table. If there is no discharge during the sampling month, the Permittee shall sample during the following month when discharge is available and submit the result as an attachment with the DMR.

"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.

"Composite" means a sample consisting of at least two grab samples of equal volume collected and combined. One grab sample each shall be collected during the first 10% of the discharge and the last 10% of the discharge.

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

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

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

"Grab Sample Average" means the arithmetic average of all grab sample analyses. Grab samples shall be collected at least once every four hours over a full operating day for as long as a discharge exists on that day (minimum of two grab samples per day).

"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.

"Hypolimnion" means the layer of water in a thermally stratified lake that lies below the thermocline, is not circulating, and remains perpetually cold.

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

"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.

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

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

"No Observable Acute Effect Level (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) RCSA demonstrating greater than 50% survival of test organisms in 100% (undiluted) effluent and 90% or greater survival of test organisms at the CTC.

"Quarterly", in the context of a sampling frequency, means sampling is required in the months of January, April, July, and October. In the event that the discharge does not occur in any of these sampling months, the Permittee shall sample during the next discharge event. The Permittee is required to sample the discharge four times a year.

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

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

"ug/l" means micrograms per liter.

SECTION 3: COMMISSIONER'S DECISION

- (A) The Commissioner has issued a final determination and found that the system to treat such discharge will protect the waters of the state from pollution. The Commissioner's decision is based on Application Nos. 200100301 and 200100302 for permits issuance received on January 31, 2001 and the administrative record established in the processing of those applications.
- (B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced applications, and all approvals issued by the Commissioner or the Commissioner's 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 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 EFFLUENT LIMITATIONS

- (A) No discharge shall contain, or cause in the receiving stream, a visible oil sheen or floating solids; or, cause visible discoloration or foaming in the receiving stream.
- (B) No discharge shall cause acute or chronic toxicity in the receiving water body beyond any zone of influence specifically allocated to that discharge in this permit.
- (C) The temperature of any discharge shall not increase the temperature of the receiving stream above 85°F, or, in any case, raise the normal temperature of the receiving stream more than 4°F.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- (A) The discharges shall not exceed and shall otherwise conform to the specific terms and conditions listed below. The discharges are restricted by, and shall be monitored in accordance with, the tables below:

Table A

Discharge Serial Number: 101-1					Monitoring Location: 1				
Wastewater Description: Filter media backwash wastewaters									
Monitoring Location Description: At the concrete spillway following the overflow from the settling lagoon									
Allocated Zone of Influence (ZOI): 391,802 gph					In stream waste concentration (IWC): 13.3 %				
PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test ³
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency ²	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency ²	Sample Type or measurement to be reported	
Aluminum, Total ⁵	mg/l	2.86	5.72	Monthly	Composite	7.60	NR	Grab	*
Aquatic Toxicity, Daphnia pulex NOAEL=100% ⁴	%	NA	≥ 90	Quarterly	Composite	≥ 90	NR	Grab	
Aquatic Toxicity, Pimephales promelas NOAEL=100% ⁴	%	NA	≥ 90	Quarterly	Composite	≥ 90	NR	Grab	
Chlorine, Total Residual ⁵	mg/l	NA	NA	NR	NA	0.071	Monthly	Grab ⁶	*
Copper, Total ⁵	mg/l	0.088	0.177	Monthly	Composite	0.23	NR	Grab	*
Flow Average and Maximum ¹	gpd	---	480,000	Continuous/Monthly	Total Flow	NA	NR	NA	
Flow, Day of Sampling	gpd	NA	480,000	Continuous/Monthly	Total Flow	NA	NR	NA	
Iron, Total ⁵	mg/l	NA	3.0	Monthly	Composite	3.0	NR	Grab	
Manganese, Total ⁵	mg/l	NA	3.0	Monthly	Composite	3.0	NR	Grab	
Nitrogen, Ammonia (total as N) ⁵	ug/l	NA	---	Quarterly	Composite	NA	NR	Grab	*
Nitrogen, Nitrate (Total as N) ⁵	ug/l	NA	---	Quarterly	Composite	NA	NR	Grab	*
Nitrogen, Nitrite (Total as N) ⁵	ug/l	NA	---	Quarterly	Composite	NA	NR	Grab	*
Nitrogen, Total Kjeldahl ⁵	mg/l	NA	---	Quarterly	Composite	NA	NR	Grab	*
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	Monthly	RDS	
Phosphorus, Total ⁵	ug/l	NA	---	Monthly	Composite	NA	NR	Grab	*
Total Dissolved Solids ⁵	mg/l	NA	1500	Quarterly	Composite	1500	NR	Grab	
Total Suspended Solids ⁵	mg/l	NA	40.0	Quarterly	Composite	40.0	NR	Grab	
Zinc, Total ⁵	mg/l	0.24	0.48	Monthly	Composite	0.64	NR	Grab	*

Table A Footnotes:

- ¹ For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Average Daily Flow and the Maximum Daily Flow for each month.
- ² The first entry in this column is the ‘Sample Frequency’. If this entry is not followed by a ‘Reporting Frequency’ and the ‘Sample Frequency’ is more frequent than monthly then the ‘Reporting Frequency’ is monthly. If the ‘Sample frequency’ is specified as monthly, or less frequent, then the ‘Reporting Frequency’ is the same as the ‘Sample Frequency’.
- ³ Minimum Level Test refers to Section 6(A)(3) of this permit.
- ⁴ The results of the toxicity tests are recorded in % survival. The Permittee shall report the % survival result on the DMR based on criteria in Section 6(B) of this permit.
- ⁵ Indicates that testing for this parameter shall be performed on the same sample used for aquatic toxicity testing.
- ⁶ Grab sample shall be collected at least once every four (4) hours over a full operating day for as long as a discharge exists on that day (minimum of two grab samples per day).

Table B

Discharge Serial Number: 301-1					Monitoring Location: 1				
Wastewater Description: Filter media backwash and filter media replacement wastewaters to the groundwater from infiltration lagoon system									
Monitoring Location Description: NR									

Table C

Discharge Serial Number: 101-A **Monitoring Location: 1**

Wastewater Description: Annual filter media replacement wastewaters

Monitoring Location Description: At the concrete spillway following the overflow from the settling lagoon

Allocated Zone of Influence (ZOI): 391,802 gph

In stream waste concentration (IWC): 30.3 %

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test ³
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency ²	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency ²	Sample Type or measurement to be reported	
Aluminum, Total ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	*
Aquatic Toxicity, Daphnia pulex NOAEL ⁴	%	NA	---	Annually	Composite	NA	NR	Grab	
Aquatic Toxicity, Pimephales promelas NOAEL ⁴	%	NA	---	Annually	Composite	NA	NR	Grab	
Chlorine, Total Residual ⁵	mg/l	NA	NA	NR	NA	0.031	Annually	Grab ⁶	*
Copper, Total ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	*
Flow Maximum ¹	gpd	---	680,000	Annually	Total Flow	NA	NR	NA	
Flow, Day of Sampling	gpd	NA	680,000	Annually	Total Flow	NA	NR	NA	
Iron, Total ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	
Manganese, Total ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	
Nitrogen, Ammonia (total as N) ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	*
Nitrogen, Nitrate (Total as N) ⁵	ug/l	NA	---	Annually	Composite	NA	NR	Grab	*
Nitrogen, Nitrite (Total as N) ⁵	ug/l	NA	---	Annually	Composite	NA	NR	Grab	*
Nitrogen, Total Kjeldahl ⁵	ug/l	NA	---	Annually	Composite	NA	NR	Grab	*
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	Annually	RDS	
Phosphorus, Total ⁵	ug/l	NA	---	Annually	Composite	NA	NR	Grab	*
Total Dissolved Solids ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	
Total Suspended Solids ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	
Zinc, Total ⁵	mg/l	NA	---	Annually	Composite	NA	NR	Grab	*

Table C Footnotes:

¹ For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Maximum Daily Flow for each day of discharge.

² The first entry in this column is the ‘Sample Frequency’. If this entry is not followed by a ‘Reporting Frequency’ and the ‘Sample Frequency’ is more frequent than monthly then the ‘Reporting Frequency’ is monthly. If the ‘Sample frequency’ is specified as monthly, or less frequent, then the ‘Reporting Frequency’ is the same as the ‘Sample Frequency’.

³ Minimum Level Test refers to Section 6(A)(3) of this permit.

⁴ The results of the toxicity tests are recorded in % survival. The Permittee shall report the % survival result on the DMR based on criteria in Section 6(B) of this permit.

⁵ Indicates that testing for this parameter shall be performed on the same sample used for aquatic toxicity testing.

⁶ Grab sample shall be collected at least once every four (4) hours over a full operating day for as long as a discharge exists on that day (minimum of two grab samples per day).

Remarks

The Permittee is required to sample the discharge one time a year during the filter media replacement in the month of **April**. Additionally, the Permittee shall attach to the DMR a schedule for the next filter media replacement.

Table D

Discharge Serial Number: 102M

Monitoring Location: 0

Wastewater Description: Hypolimnion withdrawal from Shenipsit Lake

Monitoring Location Description: Below spillway following the overflow from the lake

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test ²
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency ¹	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency ¹	Sample Type or measurement to be reported	
Aluminum, Total ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	*
Aquatic Toxicity, Daphnia pulex NOAEL ³	%	NA	NA	NR	NA	---	Annually	Grab	
Aquatic Toxicity, Pimephales promelas NOAEL ³	%	NA	NA	NR	NA	---	Annually	Grab	
BOD ₅ ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	
Copper, Total ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	*
Iron, Total ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	
Lead, Total ⁴	mg/l	NA	NA	NR	NA	----	Annually	Grab	*
Manganese, Total ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	
Nitrogen, Ammonia (total as N) ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	*
Nitrogen, Nitrate (Total as N) ⁴	ug/l	NA	NA	NR	NA	----	Annually	Grab	*
Nitrogen, Nitrite (Total as N) ⁴	ug/l	NA	NA	NR	NA	----	Annually	Grab	*
Nitrogen, Total Kjeldahl ⁴	ug/l	NA	NA	NR	NA	----	Annually	Grab	*
pH, Day of Sampling	S.U.	NA	NA	NR	NA	---	Annually	Grab	
Phosphorus, Total ⁴	ug/l	NA	NA	NR	NA	----	Annually	Grab	*
Total Dissolved Solids ⁴	mg/l	NA	NA	NR	NA	----	Annually	Grab	
Total Suspended Solids ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	
Zinc, Total ⁴	mg/l	NA	NA	NR	NA	---	Annually	Grab	*

Table D Footnotes:

¹ The first entry in this column is the ‘Sample Frequency’. If this entry is not followed by a ‘Reporting Frequency’ and the ‘Sample Frequency’ is more frequent than monthly then the ‘Reporting Frequency’ is monthly. If the ‘Sample frequency’ is specified as monthly, or less frequent, then the ‘Reporting Frequency’ is the same as the ‘Sample Frequency’.

² Minimum Level Test refers to Section 6(A)(3) of this permit.

³ The results of the toxicity tests are recorded in % survival. The Permittee shall report the % survival result on the DMR based on criteria in Section 6(B) of this permit.

⁴ Indicates that testing for this parameter shall be performed on the same sample used for aquatic toxicity testing.

Remarks

The Permittee is required to sample the discharge one time a year in the month of **July** or **August**.

- (1) All samples shall be comprised of only the wastewater described in this table. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. All samples collected shall be representative of the discharge during standard operating conditions.
- (2) In cases where limits and sample type are specified but sampling is not required by this permit, the limits specified shall apply to all samples, which may be collected and analyzed by the Department of Environmental Protection personnel, the Permittee, or other parties.
- (3) The limits imposed on the discharges listed in this permit take effect on the issuance date of this permit, hence any sample taken after this date which, upon analysis, shows an exceedance of permit limits will be considered non-compliance.

The monitoring requirements begin on the date of issuance of this permit if the issuance date is on or before the 12th day of a month. For permits issued on or after the 13th day of a month, monitoring requirements begin the 1st day of the following month.

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 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 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) 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 Section 5 Tables A and B. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.

<u>Parameter</u>	<u>Minimum Level</u>
Aluminum	10.0 ug/L
Chlorine, total residual	20.0 ug/L
Copper	5.0 ug/L
Lead	5.0 ug/L
Nitrogen, Ammonia	20.0 ug/L
Nitrogen, Nitrate	20.0 ug/L
Nitrogen, Nitrite	20.0 ug/L
Nitrogen, Total Kjeldahl	50.0 ug/L
Phosphorus	10.0 ug/L
Zinc	10.0 ug/L

- (4) 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.
- (5) 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.

- (6) 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 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 4 degrees Centigrade until Aquatic Toxicity testing is initiated.
 - (b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.
 - (c) Chemical analyses of the parameters identified in Section 5 Table A shall be conducted on an aliquot of the same sample tested for 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 Aquatic Toxicity tests, in the highest concentration of test solution 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.
 - (d) Tests for Aquatic Toxicity shall be initiated within 24 hours of sample collection.
- (2) Monitoring for Aquatic Toxicity to determine compliance with the permit limit on Aquatic Toxicity (invertebrate) above shall be conducted for 48-hours utilizing neonatal Daphnia pulex (less than 24-hours old).
- (3) Monitoring for Aquatic Toxicity to determine compliance with the permit limit on Aquatic Toxicity (vertebrate) above shall be conducted for 48-hours utilizing larval Pimephales promelas (1-14 days old with no more than 24-hours range in age).
- (4) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.
 - (a) For Aquatic Toxicity Limits expressed as an NOAEL value, Pass/Fail (single-concentration) tests shall be conducted at a specified Critical Test Concentration (CTC) equal to the Aquatic Toxicity Limit, or 100% as prescribed in Section 22a-430-3(j)(7)(A)(I) of the Regulations of Connecticut State Agencies (RCSA).
 - (b) Organisms shall not be fed during the tests.
 - (c) Copper nitrate shall be used as the reference toxicant in tests with freshwater organisms.

- (d) Synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/L (plus or minus 5 mg/L) as CaCO₃ shall be used as dilution water in tests with freshwater organisms.
- (5) Compliance with limits on Aquatic Toxicity shall be determined as follows:
 - (a) For limits expressed as an NOAEL value, compliance shall be demonstrated when the results of a valid pass/fail Aquatic Toxicity test indicates there is 90% or greater survival in the undiluted effluent.
- (C) The Permittee shall conduct annual chronic toxicity tests of DSN101-1 in accordance with the following specifications.
 - (1) Chronic toxicity testing of the discharge shall be conducted annually during July, August, or September of each year.
 - (2) Single concentration, static renewal chronic toxicity tests 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.
 - (3) Chronic toxicity tests shall utilize a single concentration test of 100% effluent.
 - (4) Shenipsit Lake water collected immediately upstream of the area influenced by the discharge shall be used as site water control (0% effluent) for the toxicity tests.
 - (5) 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 included in the test protocol.
 - (6) Grab samples of discharge DSN101-1 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 on day 5, 6, and 7 of the test. Chronic toxicity analyses shall also be performed on a laboratory water control sample. Samples shall not be dechlorinated, pH or hardness adjusted, or chemically altered in any way.
 - (7) Test solutions shall be renewed daily. Sample 1 shall be used for day 1 and 2 of the test, sample 2 shall be used for days 3 and 4, and samples 3 shall be used for the remainder of the test. In no case shall samples of DSN101-1 or control water be held longer than 24 hours prior to their first use as test solutions.
 - (8) All samples of the discharge and Shenipsit Lake water used in the chronic 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 following parameters:

pH	Copper (Total recoverable and dissolved)
Hardness	Lead (Total recoverable and dissolved)
Alkalinity	Nitrogen, Ammonia (Total as N)
Conductivity	Nitrogen, Nitrate (Total as N)
Chlorine, Total Residual	Solids, Total Suspended
Nitrogen, Nitrite (Total as N)	Zinc, (Total recoverable and dissolved)
Phosphorus, Total	Aluminum, Total
Iron, Total	Manganese, Total

SECTION 7: REPORTING REQUIREMENTS

- (A) The results of chemical analyses and any aquatic toxicity test required above shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing) at the following address. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

- (B) Complete and accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC₅₀ and NOAEL for survival, growth and/or reproduction, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, including measured daily flow and hours of operation for the day of sample collection shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the following address. The ATMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

- (C) If this permit requires monitoring of a discharge on a calendar basis (e.g. Monthly, quarterly, etc.), but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE". For those Permittees whose required monitoring is discharge dependent (e.g. per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.
- (D) A complete and thorough report of the results of the chronic toxicity monitoring specified 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 60 days after test completion to the address specified in Section 7(B) of this permit.

SECTION 8: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

- (A) If any sample analysis indicates that an Aquatic Toxicity effluent limitation in Section 5 of this permit has been exceeded, or that the test was invalid, another sample of the effluent shall be collected and tested for Aquatic Toxicity and associated chemical parameters, as described above in Section 5 and Section 6, and the results reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing), at the address listed above, within 30 days of the exceedance or invalid test. Results of all tests, whether valid or invalid, shall be reported.
- (B) If any two consecutive test results or any three test results in a twelve month period indicates that an Aquatic Toxicity Limit has been exceeded, the Permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report to Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity) for the review and 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) The Permittee shall notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division, within 72 hours and in writing within thirty days of the discharge of any substance listed in the application but not listed in the permit if the concentration or quantity of that substance exceeds two times the level listed in the application.

This permit is hereby issued on **May 28, 2009**

/S/GINA MCCARTHY
COMMISSIONER

GM/EH

DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: *The Connecticut Water Company*

PAMS Company ID: 107191

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #: CT0030341

APPLICATION #: 200100302

FACILITY ID. 146-023

PERMIT #: SP0002428

APPLICATION #: 200100301

FACILITY ID. 146-023

<u>Mailing Address:</u>						<u>Location Address:</u>					
Street:	93 West Main Street					Street:	10 Snipsic Street				
City:	Clinton	ST:	CT	Zip:	06413-1600	City:	Vernon	ST:	CT	Zip:	06066
Contact Name:	Kevin Walsh					DMR Contact	Kevin Walsh				
Phone No.:	(860) 669-8630 Ext. 3072					Phone No.:	(860) 669-8630 Ext. 3072				

PERMIT INFORMATION

DURATION 5 YEAR X 10 YEAR 30 YEAR

TYPE New X Reissuance Modification

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

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

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

PRETREAT SIGNIFICANT INDUS USER (SIU)
 PRETREAT CATEGORICAL (CIU)

POLLUTION PREVENTION MANDATE ENVIRONMENTAL EQUITY ISSUE

COMPLIANCE ISSUES

COMPLIANCE SCHEDULE YES X NO (If yes check off what it is in relation to.)

POLLUTION PREVENTION TREATMENT REQUIREMENT WATER CONSERVATION

WATER QUALITY REQUIREMENT X REMEDIATION OTHER

IS THE PERMITTEE SUBJECT TO A PENDING ENFORCEMENT ACTION? NO X YES

OWNERSHIP CODE

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

DEP STAFF ENGINEER: Enma Herrera

PERMIT FEES

<i>Discharge Code</i>	<i>DSN Number</i>	<i>Annual Fee</i>
1060000	101-1	\$ 525.00
3060000n	301-1	\$ 0.00
1060000n	101-A	\$ 0.00

FOR NPDES DISCHARGES

Drainage basin Code: 4500 **Present/Future Water Quality Standard:** AA/AA

FOR GROUNDWATER STATE PERMITS:

Drainage basin Code: 4500 **Water Quality Standard:** GAAs **Total Wells** n/a **Well Type** n/a

NATURE OF BUSINESS GENERATING DISCHARGE

The Connecticut Water Company provides potable water.

PROCESS AND TREATMENT DESCRIPTION (by DSN)

DSN 101-1 and 101-A: Water treatment wastewaters are discharged to a two-cell aerated lagoon for the settling of solids and for discharge to the surface water with minimal passive infiltration reaching the ground water. Retention time in the lagoon is approximately one day. Lagoon overflow spills/seeps into Shenipsit Lake via the outlet wall.

DSN 301-1: Groundwater discharge. No treatment is necessary.

DSN 101M: Monitoring Location

RESOURCES USED TO DRAFT PERMIT

- Federal Effluent Limitation Guideline_____
- Performance Standards
- Federal Development Document name of category
- Treatability Manual
- Department File Information
- Connecticut Water Quality Standards
- Anti-degradation Policy
- Coastal Management Consistency Review Form

X Other – Explain (See General Comments)

BASIS FOR LIMITATIONS, STANDARDS, OR CONDITIONS

X Case-by-Case Determination and Best Professional Judgment (See General Comments)
DSN 101-1: iron, manganese, ammonia, nitrate, nitrite, and total kjeldahl nitrogen, pH, phosphorus, total dissolved and suspended solids.

DSN 101-A: aluminum, copper, iron, manganese, ammonia, nitrate, nitrite, and total kjeldahl nitrogen, pH, phosphorus, NOAEL, total dissolved and suspended solids, and zinc.

X In order to meet in-stream water quality (See General Comments)
DSN 101-1: aluminum, copper, total residual chlorine, aquatic toxicity, and zinc.
DSN 101- A: total residual chlorine.

GENERAL COMMENTS

The need to include water quality based discharge limitations in this permit was evaluated to be consistent with Connecticut Water Quality Standards and criteria, pursuant to 40 CFR 122.44(d). Each parameter was evaluated for consistency with the available aquatic life criteria considering the zone of influence allocated to the facility where appropriate. 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 these limits. The calculated limits were then compared to the available effluent data. A comparison of the calculated limits to the effluent data suggests a statistical probability of exceeding such limits. Therefore, water quality based limits were included in this permit for aluminum, copper, residual chlorine, and zinc.

An assessment of the 2005-2008 aluminum data provided by CT Water was conducted, and the statistical analysis revealed the following: there is enough evidence to demonstrate that the CT Water's discharge is in compliance with Section 5(A) of this permit. The average concentration is 1.09 mg/l with a 95% Interval Confidence of (0.288 mg/l- 1.904 mg/l). Using the United States Environmental Protection Agency's Technical Support Document for Water Quality-Based Toxics Control, the maximum instantaneous limits for aluminum is 7.59 mg/l.

Section 5(b)(1)(F) of the Water Treatment Wastewater General Permit was used as guidance in establishing limitations for iron, manganese, and total dissolved solids. Best practicable control technology (BPT), best conventional pollutant control technology (BCT), and 40 CFR 133 Secondary Treatment Regulation were used as guidance in establishing limitations for pH.

OTHERS COMMENTS

The Connecticut Water Company (CWC) registered in 1983 the 15 MGD withdrawal of raw water from the Shenipsit Lake under Registration No. #4500-003-PWS-IM. However, CWC is currently withdrawing only 5 MGD.

An individual NPDES Permit No. CT0002216 was issued to CWC on March 4, 1974 and renewed in 1979 and 1984 for the discharge of settled filter backwash wastewater. This permit expired on September 14, 1989. Consequently, CWC submitted a timely renewal permit application received on February 23, 1989. This application was withdrawn on May 8, 1996.

In April 1996, CWC submitted a Water Treatment Wastewater General Permit registration. The general permit GWT000052 covered the following discharges: filter media backwash and replacement discharge to the ground and surface water; clarifier residuals and clean out discharge to the sanitary sewer; routine maintenance of the storage tanks discharge to the surface water; and discharges other than water treatment wastewaters. At that time, it appeared that all conditions of the general permit could be satisfied. However, further investigation revealed that the minimum two-foot separating distance between the bottom of the lagoon and bedrock was not maintained throughout

the lagoon. In addition, CWC has reported exceedances of aluminum and total suspended solids limits set in the General Permit. Therefore, CWC submitted on January 21, 2001 a NPDES permit application to discharge wastewaters from the filter media backwash and filter media replacement. Section 22a-430 (c), subpart (1) states that the Commissioner may require an individual permit in cases including but not limited to, "When a discharger is not in compliance with the conditions of a general permit."