

# DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: Norfolk Sewer District

**PERMIT, ADDRESS, AND FACILITY DATA**

PERMIT #:   x        APPLICATION #:   x        FACILITY ID.   x  

<u>Mailing Address:</u> Street: 259 Greenwoods Rd, West (Route 44) City: Norfolk                      ST: CT    Zip: 06058 Contact Name: John Zucco, Superintendent Phone No.: 860-542-5647	<u>Location Address:</u> Street: Same as mailing address City:                                      ST: CT    Zip: Contact Name: John Zucco/Bill Hester Phone No.: 860-542-5647 DMR Contact email address: norfolksewerdist@sbcglobal.net
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**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)   

NPDES SIGNIFICANT MINOR or PRETREAT SIU (SI)   

NPDES or PRETREATMENT MINOR (MI)   x  

**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   

**DEP STAFF ENGINEER** Carlos Esguerra

**DATE DRAFTED:**6/8/15

**PERMIT FEES**

Discharge Code	DSN Number	Annual Fee
111000c	001	\$1,722.50

**FOR NPDES DISCHARGES**

Drainage Basin Code:                      Water Quality Classification Goal: **B** Segment: Blackberry River-6100

***NATURE OF BUSINESS GENERATING DISCHARGE***

*Municipal Sanitary Sewage Treatment*

***PROCESS AND TREATMENT DESCRIPTION (by DSN)***

*Secondary treatment with sand filtration and seasonal chlorination and de-chlorination.*

## **RESOURCES USED TO DRAFT PERMIT**

- Federal Effluent Limitation Guideline 40CFR 133 Secondary Treatment Category
- Performance Standards
- Federal Development Document name of category
- Department File Information
- Connecticut Water Quality Standards
- Anti-degradation Policy
- Coastal Management Consistency Review Form
- Other – Explain: Inspection reports

## **BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS**

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

## **GENERAL COMMENTS**

The Norfolk Sewer District (“the District”) operates a municipal water pollution control facility (“the facility”) located at 259 Greenwoods Rd in Norfolk. The facility is designed to treat and discharge up to 0.35 million gallons a day of effluent into the Blackberry River. The facility currently uses secondary treatment with sand filtration and seasonal chlorine disinfection to treat effluent before being discharged. Pursuant to Conn. Gen. Stat. § 22a-430, the Department of Energy and Environmental Protection has issued the District a permit for the discharge from this facility. The District has submitted an application to renew its permit. The Department has made a tentative determination to approve the District’s application and has prepared a draft permit consistent with that determination.

The most significant changes from the current permit are the inclusion of a Copper loading limit, a seasonal phosphorus load cap, revised bacteria monitoring requirements (e.g. e. coli), aluminum monitoring to be consistent with the most recent CT Water Quality Standards, and Iron monitoring to be consistent with EPA’s National Recommended Water Quality Criteria.

Historically, flows reaching the District’s POTW exceed on a regular basis the permitted capacity of the plant (i.e. 0.35 MGD). This is due to excessive infiltration/inflow entering the District’s wastewater collection. For this reason, DEEP issued order No. AO-WR-MU-11-001 on May 5, 2011 to require the District to address this issue.

## **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 were included in the permit at this time.

A limit has been included in this permit to cap the phosphorus load this discharge is permitted for:

#### *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.*

#### *Norfolk Sewer District Permit Requirements*

*A nutrient watershed analysis was conducted for the watershed below facilities discharging phosphorus into the Blackberry River. The facilities discharging to the Blackberry River include: Norfolk WPCF and Canaan Fire District WPCF. The current enrichment factor at the Norfolk Sewer District WPCF discharge is 7.2 which is below the seasonal (April 1<sup>st</sup> through October 31<sup>st</sup>) nutrient enrichment factor of 8.4. The final proposed seasonal load allocation for this facility is 3.45 lbs/day.*

*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.*

#### **WATER QUALITY LIMIT CALCULATIONS**

*See attached*



**Notice of Tentative Determination to Approve  
NPDES Permit renewal  
Applicant: Norfolk Sewer District  
Application No. 200900411  
Town of Norfolk**

The Commissioner of the Department of Energy and Environmental Protection (“DEEP”) hereby gives notice that a tentative determination has been reached to approve the following application.

Applicant’s Name and Address: Norfolk Sewer District  
Ronald Zanobi, Chairman  
259 Greenwoods Rd, West (Route 44)  
Norfolk, CT 06058

Contact Name and Phone No.: John Zucco, Plant Superintendent  
860-542-5647

Type of Permit and #: NPDES – CT0101231

Type of Facility: Domestic wastewater treatment

Facility Location: 259 Greenwoods Rd, West (Route 44)  
Norfolk, CT 06058

Facility design capacity: 0.35 million gallons per day

**COMMISSIONER’S FINDINGS/REGULATORY CONDITIONS**

The applicant has previously received a permit from the Department of Energy and Environmental Protection (“Department”) authorizing the discharge of up to an annual average daily design flow of 0.35 million gallons a day of secondary treated municipal wastewaters to Blackberry River. The applicant has submitted an application to renew its existing permit. This renewal application is the subject of this notice.

**THE DRAFT PERMIT**

The Department has prepared a draft permit consistent with the tentative determination to approve Norfolk Sewer District renewal application. This draft is available on the public participation section of the Department’s website. In accordance with Sections 22a-430-4(l) and 22a-430-4(r) of the Regulations of Connecticut State Agencies (RCSA), the draft permit contains effluent limitations that meet Connecticut’s Water Quality Standards for the following: Ammonia (seasonal), Aquatic Toxicity, Biochemical Oxygen Demand (5 day), chlorine, copper, Escherichia coli, fecal coliform(interim), flow, pH, total phosphorus (load cap) and total suspended solids.

This permit contains an enforceable compliance schedule which requires the applicant to:

- Comply with Escherichia coli monitoring requirements no later than 730 days after permit issuance

#### INFORMATION REQUESTS/PUBLIC COMMENT

This application has been assigned No. 200900411; please use this number when corresponding with DEEP regarding this application. Interested persons may obtain copies of the application from the applicant at the above address. The application and supporting documentation are available for inspection at the Department of Energy and Environmental Protection, Water Protection and Land Reuse, 79 Elm Street, Hartford, CT from Monday to Friday from 9:00 a.m. to 4:30 p.m. and at other times by appointment. Questions may be directed to Carlos Esguerra of the Municipal Facilities Section at 860-424-3756 or [carlos.esguerra@ct.gov](mailto:carlos.esguerra@ct.gov).

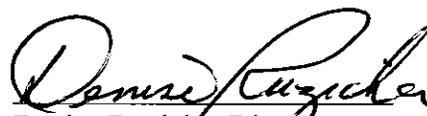
Before making a final decision on this application, the Commissioner shall consider written comments on the application from interested persons. Written comments on the application should be directed to Carlos Esguerra, Planning and Standards Division, Water Protection and Land Reuse Bureau, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127, or may be submitted via electronic mail to: [carlos.esguerra@ct.gov](mailto:carlos.esguerra@ct.gov) no later than thirty (30) days from the publication date of this notice.

#### PETITIONS FOR HEARING

The Commissioner may conduct a public hearing if the Commissioner determines that the public interest will best be served thereby, or shall hold a hearing upon receipt of a petition signed by at least twenty-five persons. Petitions should include the application number noted above and also identify a contact person to receive notifications. Petitions may also identify a person who is authorized to engage in discussions regarding the application and, if resolution is reached, withdraw the petition. Original signed petitions may be scanned and sent electronically to [deep.adjudications@ct.gov](mailto:deep.adjudications@ct.gov) or may be *mailed or delivered* to: DEEP Office of Adjudications, 79 Elm Street, 3<sup>rd</sup> floor, Hartford, CT 06106-5127. All petitions must be received within the comment period noted above. If submitted electronically, original signed petitions must also be mailed or delivered to the address above within ten days of electronic submittal. If a hearing is held, timely notice of such hearing will be published in a newspaper of general circulation.

Dated:

**JUL 10 2015**



Denise Ruzicka, Director  
Planning and Standards Division  
Bureau of Water Protection and Land Reuse

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action and Equal Opportunity Employer that is committed to complying with the Americans with Disabilities Act. To request an accommodation contact us at (860) 418-5910 or [deep.accommodations@ct.gov](mailto:deep.accommodations@ct.gov).