

# U.S. ENVIRONMENTAL PROTECTION AGENCY

## NATIONAL STUDY OF NUTRIENT REMOVAL AND SECONDARY TECHNOLOGIES: POTW SCREENER QUESTIONNAIRE



Form Approved

OMB Control No. XXXX-XXXX

Approval Expires XX/XX/XXXX

The public reporting and recordkeeping burden for this collection of information is estimated to average 3.3 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This estimate includes the time needed to review instructions, develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

To comment on the Agency's need for this collection, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID No. EPA-HQ-OW-2016-0404, which is available for public viewing at the Water Docket in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC 20004. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the Water Docket is (202) 566-2426. An electronic version of the public docket is available through the Federal Docket Management System (FDMS) at <http://www.regulations.gov>. Use FDMS to submit or view public comments, access the index listing of the contents of the public docket, and access those documents in the public docket that are available electronically. Once in the system, select "search", then key in the docket ID number identified above. Please include the EPA Docket ID No. (EPA-HQ-OW-2016-0404) and OMB control number (XXXX-XXXX) in any correspondence.

## INTRODUCTION, PURPOSE, AND AUTHORITY

Over the last 50 years, the amount of nitrogen and phosphorus (a.k.a., nutrient) pollution entering the nation's waters has increased significantly. The levels of nutrients pollution have degraded quality of drinking water sources and environmental water quality. Nutrient pollution also appears to provide a chemical platform for the growth of harmful algal blooms (HABs) which can release cyanotoxins. Nutrients have the potential to become one of the costliest and most challenging environmental problems we face. States must respond to local water quality issues, and will need a variety of tools and resources to sustain progress in reducing nutrient pollution. The United States Environmental Protection Agency (EPA) is collaborating with states to reduce nutrient pollution. To support this goal, EPA's Office of Water is conducting a nationwide study to evaluate the nutrient removals and related technology performance by different types of publicly owned treatment works (POTWs), as defined under 40 CFR section 403.3(q). As part of this study, EPA will share statistically representative data on the profile and performance of POTWs across the country. The study will be conducted in phases, allowing for interactions with stakeholders and experts in each phase. To begin that process, EPA needs to update and supplement existing information on the universe of POTWs in the U.S., along with some basic characteristics of those POTWs. EPA is conducting this first screener as a census to fully characterize the universe of POTWs in the U.S. By collecting updated POTW identification and characterization data, a more complete industry profile that does not exist in any other known database will be developed to allow for future data collection based on a statistically valid methodology. Future data collection would evaluate nutrient loadings by all types of POTWs, performance of nutrient reduction technologies and operational strategies at facilities with secondary treatment or equivalent, and identify alternatives to implementing full biological nutrient removal (BNR) to support the reduction of nutrient loadings discharged into the nation's waters.

This survey is being conducted under the authority of Section 308 of the Clean Water Act (Federal Water Pollution Control Act, 33 U.S.C. Section 1318). **All facilities that receive this questionnaire must respond within 30 days of receipt.** Failure to respond, late filing, or failure to comply with the instructions may result in fines, civil penalties, and other sanctions, as provided by law.

## COMPLETION OF THE QUESTIONNAIRE

EPA's Office of Water, Office of Science and Technology, will administer the questionnaire as a census to all known POTWs in the United States that discharge wastewater. The questionnaire consists of 24 questions to collect information on POTW identification, outfall identification, and POTW operations and treatment characteristics. Respondents will be required to complete and submit an electronic version of the questionnaire.

EPA will use the technical data collected in this survey to develop an industry profile of POTWs, including information on location, size of operation, types of wastewater collected, types of treatment technologies in use, and nutrient characteristics. For detailed information on how EPA plans to use these data obtained from each of the questions, see the document titled “Supporting Statement – National Study of Nutrient Removal and Secondary Technologies: POTW Study Screener Questionnaire for the U.S. Environmental Protection Agency” at EPA Docket ID No. (EPA-HQ-OW-2016-0404). You can also learn more about the study, generally, at <https://www.epa.gov/eg/national-study-nutrient-control-and-water-treatment-technologies>.

**EPA requests information for calendar year 2016.**

The questionnaire should be completed by personnel knowledgeable about the information requested. An official or designee responsible for directing or supervising the response to the questionnaire must certify that the information submitted is, to the best of their knowledge and belief, accurate and complete. See the instruction below for completing the web-based questionnaire and the certification statement.

**Keep a copy of the completed questionnaire.** EPA will review the information submitted and may request your cooperation in answering follow-up questions, if necessary, to complete our analyses.

EPA’s intent for this census is to receive a completed questionnaire for each POTW defined as a POTW at 40 CFR section 403.3(q). A POTW is defined under 40 CFR section 403.3(q) as “a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant.”

EPA used information from multiple data sources to identify the POTWs to receive this questionnaire. However, EPA’s efforts to compare and consolidate these data sources may have resulted in

- (1) a recipient with a single treatment works receiving multiple questionnaires (duplicate questionnaires);
- (2) a recipient with multiple treatment works within the same jurisdiction receiving too few questionnaires (multiple treatment works represented in the database by a single identifier), or;
- (3) a recipient that was incorrectly identified as a treatment works.

In assessing whether your facility consists of a single or multiple treatment works, please consider factors such as (1) whether the influent to the treatment works is fed by a single, combined collection system, (2) whether all influent is managed using the same series of devices and systems, and (3) whether all of the treatment works involved fall under the same jurisdiction. As guidance, an example of a single treatment works is a facility that receives wastewater from a single collection system with all wastewater receiving the same treatment

(includes treatment by parallel, identical treatment trains). An example of multiple treatment works is a facility that receives wastewater from multiple municipalities with each municipality operating a separate collection system that feeds into a separate treatment system (regardless of whether the treatment systems are identical or whether treatment system effluents are combined for discharge). See example diagrams below. You may also contact EPA's helpline for additional guidance and instruction.

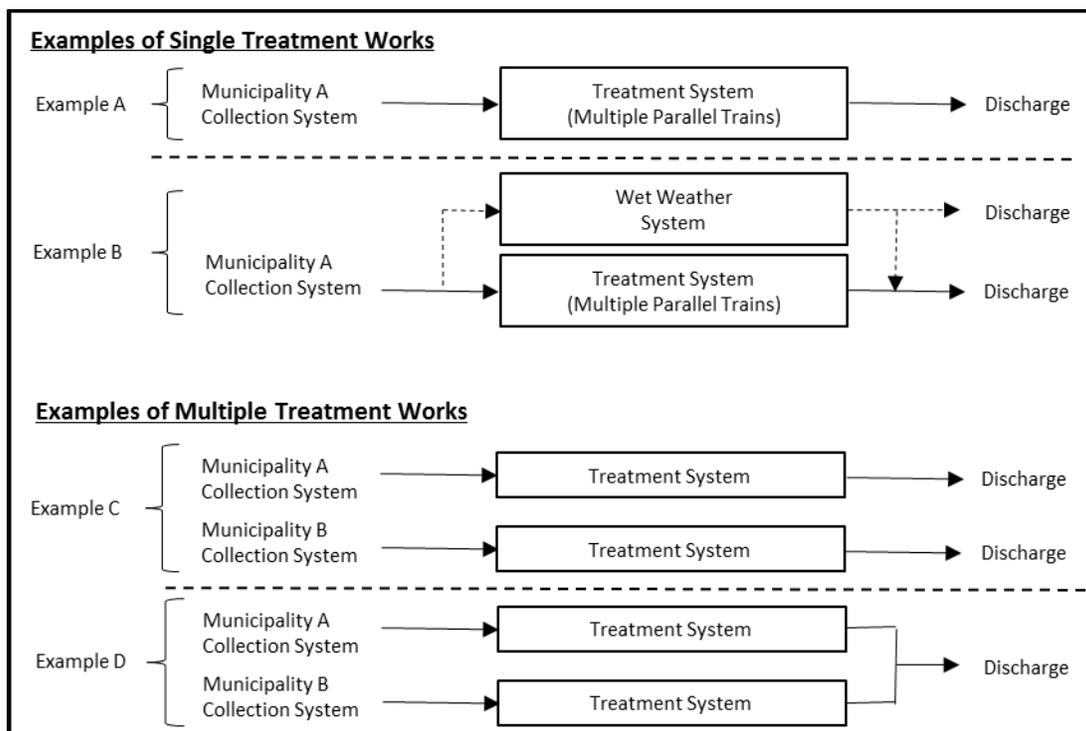


Figure 1. Example Treatment Works Configurations

**Duplicate questionnaires.** If you received multiple questionnaires for the same treatment works, identify the duplicate questionnaire(s) and select the 'Duplicate questionnaire' opt-out response to Question 1 for that questionnaire.

**Multiple treatment works.** If you received too few questionnaires for your facility with multiple treatment works that fall under the same jurisdiction, decide which of your treatment works is missing a questionnaire. Refer to the **INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE** for direction on how to complete multiple questionnaires.

**Incorrectly identified.** If you received a questionnaire and you are a federally or privately owned treatment works, or if your facility functions exclusively as a dedicated flow control entity such as a Combined Sewer Overflow (CSO) or a Sanitary Sewer Overflow (SSO) facility, select the appropriate response to Question 2 for that questionnaire.

### ELECTRONIC VERSION OF THE QUESTIONNAIRE

This questionnaire is available in electronic format, and respondents are required to submit the completed questionnaire to EPA in electronic format. The electronic questionnaire has been developed to meet the 1998 Government Paperwork Elimination Act (GPEA).

EPA designed the questionnaire to include burden-reducing features. For example, it contains “screening” questions that direct respondents that do not meet the definition of publicly owned treatment works (POTWs) under 40 CFR section 403.3(q) to indicate their status and respond without the need to answer to the remaining questions. The questionnaire is also designed with drop down choices to simplify responses, minimizing the number of text responses. EPA will post a pdf version of the questionnaire in the docket and on the study website that is available for respondents to print out and use as a working copy.

Specific instructions on electronic distribution and submission will be included once the format is set.

To be determined:

Weblink

Entering facility ID

Submitting response

Certification

Lack of web access

### QUESTIONNAIRE ASSISTANCE

If you have any questions about completing this questionnaire, you can request assistance using EPA’s email and telephone helplines provided below.

Frequently asked questions regarding the screener can be found on the EPA Website at <https://www.epa.gov/eg/national-study-nutrient-control-and-water-treatment-technologies>.

#### EPA POTW Screener Questionnaire Help Lines

Eastern Research Group, Inc..... Local: 703-633-XXXX or Toll-free: 1-xxx-xxx-xxxx

E-mail..... POTWhelp@erg.com

### WHEN TO RETURN THE QUESTIONNAIRE

The response to this questionnaire is due 30 days after receipt. If you wish to request an extension, you must do so **in writing** within **xx** days of receipt of this questionnaire. Written requests may be e-mailed (preferred) or mailed to:

Paul Shriner  
USEPA Headquarters  
William Jefferson Clinton Building  
1200 Pennsylvania Avenue, N. W.  
**Mail Code:** 4303T  
Washington, DC 20460  
*nutrient-removal-study@epa.gov*

Extension requests will be evaluated on a case-by-case basis. Submittal of an extension request to EPA does **not** alter the due date of your questionnaire unless and until EPA agrees to the extension and establishes a new date.

### WHERE TO RETURN THE QUESTIONNAIRE

[EPA intends to create an electronic web-based questionnaire to minimize burden. However, EPA also recognizes there may be cases where POTWs may lack electronic access and require a format that can be mailed to EPA. This text is intended to function as a placeholder for that situation, and more specific instructions will be given when the final questionnaire format is determined.]

After completing the questionnaire and certifying the information that it contains, use the enclosed mailing label to mail the completed questionnaire to:

U.S. Environmental Protection Agency  
POTW Study Screener Questionnaire  
c/o Eastern Research Group, Inc.  
14555 Avion Parkway, Suite 200  
Chantilly, VA 20151-1102

**CERTIFICATION STATEMENT**

The individual responsible for directing or supervising the preparation of the questionnaire must read and sign the Certification Statement listed below. The certifying official must be a responsible corporate official or his/her authorized representative.

**Certification Statement**

*I certify under penalty of law that the attached questionnaire was prepared under my direction or supervision and that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, accurate and complete. In those cases, where we did not possess the requested information for questions applicable to our company, we provided best estimates. We have to the best of our ability indicated what we believe to be company confidential business information as defined under 40 CFR Part 2, Subpart B. We understand that we may be required at a later time to justify our claim in detail with respect to each item claimed confidential. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment as explained in Section 308 of the Clean Water Act.*

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Certifying Official

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Title of Certifying Official

\_\_\_\_\_  
Company Name

## ACRONYMS

BOD	Biological Oxygen Demand
CSO	Combined Sewer Overflow
CWA	Clean Water Act
FRS	Facility Registry Services
GPD	Gallons per day
MG	Million gallons
MGD	Million gallons per day
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OMB	Office of Management and Budget
POTW	Publicly Owned Treatment Works
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids

## GLOSSARY

**Average Flow** – The average flow based on flow data from 2016.

**Clean Water Act** – An act passed by the U.S. Congress to control water pollution. It was formerly referred to as the Federal Water Pollution Control Act of 1972 or Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500), 33 U.S.C. 1251 et. seq., as amended by P.L. 96-483; P.L. 97-117; P.L. 95-217, 97-117, 97-440, and 100-04. [CWA §503.9]

**Combined Sewer System** – A wastewater collection system, owned by a state or municipality, which conveys sanitary wastewaters (domestic, commercial, and industrial wastewaters) and stormwater through a single-pipe system to a publicly owned treatment works (POTW) treatment plant.

**Combined Sewer Overflow (CSO)** – A combined sewer system designed to overflow during precipitation events (e.g., rainfall or snowmelt) when collection system capacity is exceeded, resulting in a discharge of untreated wastewater from a combined sewer system directly to surface water at a point prior to the headworks of a publicly owned treatment works (POTW).

**Design Capacity Flow** – The maximum flow that the treatment works is capable by design to successfully process.

**Domestic Sewage** – Waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works. [CWA §503.9]

**Facility Registry Services (FRS)** – A centrally managed database that identifies facilities, sites, or place subject to environmental regulations or of environmental interest. The FRS provides Internet access to a single integrated source of comprehensive (air, water, and waste) environmental information about those facilities, sites, or places.

**Headworks** — The point at which wastewater enters a wastewater treatment plant. The headworks may consist of bar screens, comminuters, a wet well, or pumps.

**Infiltration** – Stormwater and groundwater that enter a sewer system through such means as defective pipes, pipe joints, connections, or manholes. Excludes inflow.

**Inflow** – Water, other than wastewater, that enters a sewer system from sources such as roof leaders, cellar drains, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross sections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or other drainage. Excludes infiltration.

**Municipality** – A city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA. *[modified from CWA §502(4)]*

**National Pollutant Discharge Elimination System (NPDES)** – The national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 318, 402, and 405 of the Clean Water Act. The Clean Water Act prohibits anybody from discharging pollutants through a point source into a water of the United States unless they have a NPDES permit.

**Nutrient** – Any substance assimilated by living things that promotes growth. The term is generally applied to all forms of nitrogen and phosphorus in wastewater.

**Optimization** — An activity that results in an improvement in the nutrient removal of an existing treatment works without requiring significant infrastructure upgrades.

**Peak Flow** — The average of the peak flows sustained for a period of one hour.

**Post-consumer food** — Food waste that enters the sewage stream.

**Publicly Owned Treatment Works** – A treatment works, as defined by Section 212 of the Clean Water Act and at 40 CFR section 403.3(q), that is owned by a State, municipality, or tribal organization.

**Separate Sewer System** – A wastewater collection system, owned by a state or municipality, that is specifically designed to collect and convey only sanitary wastewater (domestic sewage

from homes as well as industrial and commercial wastewater). In such systems, stormwater is conveyed through an additional set of pipes.

**Septage** – Also known as septic tank sludge, septage is the liquid or solid material removed from a septic tank cesspool, portable toilet, type III marine sanitation device, or a similar system. Septage is pumped out of a septic tank or onsite sewage facility with a vacuum truck and may be transported to, and discharged directly into a NPDES permitted publicly owned treatment works (POTW), a storage/treatment facility specifically designed for the storage/treatment of domestic septage and "restaurant" grease (animal/vegetable only), or it may be land applied.

**State** – A State, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territory of the Pacific Islands. *[source: CWA §502(3)]*

**Stormwater** – Rainwater or melted snow that runs off the treatment works' property.

**Treatment System** – The portion of the treatment works which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste. *[modified from 40 CFR §403.3(r)]*

**Treatment System Effluent** – The treated wastewater produced by a treatment system.

**Treatment Works** – Devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage. It also includes sewers, pipes and other conveyances only if they convey wastewater to a treatment plant. *[modified from 40 CFR §403.3(q)]*

**Wet Weather System** – A system through which flow is diverted past portions of the treatment works during wet weather events.

**Wet Weather System Effluent** – The wastewater effluent produced by a wet weather system.

**INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE**

**Read all instructions.**

**Definitions of key terms are defined in the GLOSSARY on p. X and acronyms and measurement units are defined in the ACRONYMS list on p. X.**

**Enter the Plant ID located in the cover letter received from EPA to initiate the questionnaire.** If you received too few questionnaires for your facility with multiple treatment works (see **COMPLETION OF THE QUESTIONNAIRE** on p. X for clarification), enter questionnaire response for the missing questionnaire using the Plant ID located in the cover letter received from EPA, adding '-1' to initiate the questionnaire. For example, if the Plant ID from the cover letter is '234' enter '234-1' as the Plant ID for the additional treatment works. **[Pending the final questionnaire format and distribution, further instructions will be included.]**

**Mark applicable responses for each question.** Fill in the appropriate response(s) to each question. Answer the questions in sequence. Depending on your responses to certain questions, automated features within the form may skip questions determined to not be applicable to you, or may request more detailed information about those responses.

**Best engineering estimates.** EPA is not requiring you to perform non-routine tests or measurements solely for the purpose of responding to this questionnaire. In the event exact data or information are not available, provide responses using your best professional judgement.

**Pay close attention to the measurement units requested (e.g., MGD).** Measurement units are defined in the acronyms list at the end of these instructions. Report answers in the units that are specified.

**Provide any necessary notes or comments in the Remarks section at the end of the questionnaire.** Operations are expected to fluctuate, but note in the Remarks section if any information is not representative of normal operations and why.

**Questions?** If you have questions about completing this questionnaire, see the section entitled **QUESTIONNAIRE ASSISTANCE**.



## 2016 POTW STUDY SCREENER QUESTIONNAIRE

OMB Control No. XXXX-XXXX

Plant ID: XYZ-01

Approval Expires XX/XX/XXXX

**DUE DATE: within 30 days of receipt. EPA requests information for calendar year 2016.**

**YOUR RESPONSE IS REQUIRED BY LAW.** Title 33, United States Code, requires businesses and other organizations that receive this questionnaire to answer the questions and submit the completed questionnaire to the U.S. Environmental Protection Agency.

### **Section A ELIGIBILITY CONFIRMATION**

1. Is this facility a treatment works used in the storage, treatment, recycling, and reclamation of municipal sewage? [What's This?](#)<sup>1</sup> [NOTE: The 'What's This?' feature allows the respondent to receive additional information by hovering their cursor over the 'What's This?' link. For this draft, the 'What's This?' text is included in the footnotes.]

- Yes  
 No  
 Duplicate questionnaire [What's This?](#)<sup>2</sup>

[NOTE: If answer to Q1 is 'Yes', sub-routine will proceed to Q2. If answer to Q1 is 'No', sub-routine will present this facility type question and end survey activity. If answer to Q1 is 'Duplicate Questionnaire', sub-routine will end survey activity.]

Which of the following do you operate? Check all that apply.

- Municipal Separate Storm Sewer System (MS4)  
 Combined Sewer Overflow (CSO) Only  
 Stormwater/Industrial Stormwater System  
 Septic System  
 Drinking Water Treatment Plant  
 Collection System  
 Other- *Enter a brief description of the facility type:*



**IF YOU ANSWERED NO OR DUPLICATE QUESTIONNAIRE TO QUESTION 1, DO NOT COMPLETE THE REMAINDER OF THIS QUESTIONNAIRE.**

<sup>1</sup>Treatment works means devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage. It also includes sewers, pipes and other conveyances only if they convey wastewater to a treatment plant. [modified from 40 CFR §403.3(q)]

<sup>2</sup>If you received multiple questionnaires for the same treatment works, identify duplicate questionnaire(s) by selecting the 'Duplicate questionnaire' opt-out response to Question 1.

2. Which of the following describes the ownership type of your treatment works? Check all that apply.

- Publicly owned (owned by a State, municipality or tribal organization [What's This?](#)<sup>3</sup>)
- Privately owned (owned by a private individual or organization)
- Federally owned (owned by the U.S. federal government)



**IF YOU DID NOT ANSWER PUBLICLY OWNED TO QUESTION 2, DO NOT COMPLETE THE REMAINDER OF THIS QUESTIONNAIRE.**

3. Is your treatment works physically capable of directly discharging treatment system effluent to a surface water?

- Yes
- No

[NOTE: If answer to Q3 is 'No', sub-routine will present this discharge type question and end survey activity.]

Which of the following alternate discharge or disposal methods is your treatment works using to manage treatment system effluent? Check all that apply.

- Discharge to another POTW [What's This?](#) - Enter mailing address:

[NOTE: If answer to discharge type question is 'Discharge to another POTW', sub-routine will present this facility identification question.]

Facility name:  (required)

Street:

City:

State:

Zip Code:  (5-digit zip or zip-4 digits)

FRS ID:

NPDES ID:

<sup>3</sup>Publicly owned means owned by a State, municipality, or tribal organization. State means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territory of the Pacific Islands. [source: CWA §502(3)] Municipality means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 1288 of this title. [modified from CWA §502(4)]

- Discharge to a non-publicly owned treatment works (e.g., privately or federally owned)
- 100% reuse
- Evaporation
- Other disposal method (e.g., underground injection, groundwater recharge, land application)



**IF YOU DID NOT ANSWER YES TO QUESTION 3,  
DO NOT COMPLETE THE REMAINDER OF THIS QUESTIONNAIRE.**

**Section B POTW IDENTIFICATION**

4. Is the facility name shown in your questionnaire cover letter received from EPA correct?

- Yes
- No – *Enter facility name:*

5. Is the mailing address shown in your questionnaire cover letter correct?

- Yes
- No – *Enter mailing address:*
  - Street:*
  - City:*
  - State:*
  - Zip Code:*  (5-digit zip or zip-4 digits)

6. Is the mailing address shown in your questionnaire cover letter the same as the treatment works’ physical location?

- Yes
- No – *Enter physical location:*
  - Street:*
  - City:*
  - State:*
  - Zip Code:*  (5-digit zip or zip-4 digits)

**OR**

*Latitude:*  *Longitude:*

7. If we have any questions about your response, whom may we contact?

Name:

Street:

City:

State:

Zip Code:  (5-digit zip or zip-4 digits)

Phone:

e-Mail:  @  .

8. What is the Facility Registry Service (FRS) ID associated with this treatment works? [What's This?](#)<sup>4</sup>

FRS ID:

9. What is the National Pollutant Discharge Elimination System (NPDES) ID associated with this treatment works? [What's This?](#)<sup>5</sup>

Do not have a NPDES permit

NPDES ID:

<sup>4</sup>The Facility Registry Services (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The FRS provides Internet access to a single integrated source of comprehensive (air, water, and waste) environmental information about those facilities, sites, or places.

<sup>5</sup>The National Pollutant Discharge Elimination System (NPDES) is the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 318, 402, and 405 of the Clean Water Act. The Clean Water Act prohibits anybody from discharging pollutants through a point source into a water of the United States unless they have a NPDES permit.

**Section C POTW OPERATIONS AND TREATMENT CHARACTERISTICS**

10. Which of the following best describes the maximum population served by your treatment works at any time in 2016? Check the most applicable.

- < 1,000 individuals
- 1,000 – <5,000 individuals
- 5,000 – <10,000 individuals
- 10,000 – <50,000 individuals
- 50,000 – <100,000 individuals
- 100,000 – <300,000 individuals
- 300,000 – <1,000,000 individuals
- > 1,000,000 individuals

[NOTE: Regardless of answer to Q10, sub-routine will present this seasonal variation question.]

Does the population served vary seasonally by more than 50% (e.g., college town, vacation resort, snowbird destination)?

- Yes
- No

11. What are the design capacity, average daily and respective peak flows (MGD) of your treatment works in 2016? Do not include additional capacity used for primary treatment only.

Design Capacity Flow: *What's This?*<sup>6</sup>

Daily:  MGD

Peak Flow:  MGD

*What's This?*<sup>7</sup>

Average Flow: *What's This?*<sup>8</sup>

Daily:  MGD

Peak Flow:  MGD

*What's This?*<sup>7</sup>

<sup>6</sup>Design Capacity Flow: This is the maximum flow that the treatment works is capable by design to successfully process.

<sup>7</sup>Peak Flow: The average of the peak flows sustained for a period of one hour.

<sup>8</sup>Average Flow: The average flow based on flow data from 2016.

12. Indicate in Table 1 what percentage of the wastewater treated at your treatment works during dry weather was from each of the following sources in 2016. All values should be entered in Table 1. Estimate using best professional judgement. The sum of all responses should equal 100%. Please enter zero (0) if no contribution was received from a particular source.

Please note that the category of ‘septage’ is intended to cover septic tank sludge which is pumped out and may be transported to and discharged directly into the treatment works. It should be accounted for separately from collected residential, commercial, and industrial wastewater.

**Table 1. Wastewater Contributions**

Type of Contribution	Percentage of Treated Wastewater
Residential	%
Commercial	%
Industrial	%
Septage	%
Other	%

[NOTE: If the response to Q12 ‘Other’ is >0, sub-routine will present this description question.]

Describe what comprises ‘Other’:

[NOTE: If the response to Q12 ‘Industrial’ is >0, sub-routine will present this contribution variation question.]

Do industrial contributions vary over the course of the year by more than 25% (excluding diurnal fluctuations)?

- Yes
- No

**13.** In 2016, which type of collection system(s) fed into the treatment works? Estimate percentages of contribution using best professional judgement. The sum of all responses should equal 100%. Please enter zero (0) if no contribution was received from a particular source.

<i>Separate sewer collection system</i>	<input type="text"/>	%
<i>Combined sewer collection system:</i>	<input type="text"/>	%
<i>Received from off-site (Septage):</i>	<input type="text"/>	%
<i>Received from off-site (Industrial):</i>	<input type="text"/>	%
<i>Received from off-site (Other):</i>	<input type="text"/>	%
<i>Total:</i>	<input type="text"/>	%

**14.** Did your treatment works receive wastewater from any of the following industrial/commercial sources in 2016? Check all that apply.

- Airport deicing
- Animal processing (e.g., meat processing, poultry processing, aquaculture)
- Chemical manufacturing (e.g., organic and/or inorganic)
- Dairy product manufacturing/processing (e.g., milk, cheese)
- Fertilizer manufacturing
- Grain milling
- Metals manufacturing and processing (e.g., electroplating, smelting, iron and steel)
- Non-animal food processing
- Petroleum refining
- Phosphate manufacturing
- Post-consumer food [What's This?](#)<sup>9</sup>
- Pulp and paper manufacturing
- Steam electric power
- Oil and gas
- None of the above

<sup>9</sup> Post-consumer food is food waste that enters the sewage stream.

15. What is the estimated average daily inflow and infiltration to the treatment works?

Estimated Inflow *What's This?*<sup>10</sup>

*Average Daily Inflow:*

GPD or  MGD

Estimated Infiltration *What's This?*<sup>11</sup>

*Average Daily Infiltration:*

GPD or  MGD

16. Which of the following technologies are included in the treatment works? Check all that apply.

- Preliminary and/or primary treatment (e.g., grit removal, flow equalization)
- Biological treatment – indicate which types of biological treatment technologies are operated. Check all that apply.

[NOTE: If 'Biological treatment' is indicated, sub-routine will present these biological unit process options.]

- Attached growth: Trickling filter system (e.g., trickling filter with any media, activated biofilter)
- Attached growth: Other system (e.g., fixed-film reactor, fluidized-bed bioreactor, fixed bed reactor)
- Combined suspended/attached growth systems (e.g., integrated fixed film activated sludge, moving-bed biofilm reactor)
- Suspended growth: Tank/reactor system (e.g., sequencing batch reactor, activated sludge, oxidation ditch)
- Suspended growth: Natural wastewater treatment system (e.g., waste stabilization pond, wetland, facultative lagoon).

[NOTE: If 'Suspended growth: Natural wastewater treatment system' is indicated, sub-routine will present both simple or complex question and mechanical aeration question.]

Is your natural wastewater treatment system simple or complex? Check the most applicable.

- Simple (single cell) aquatic system
- Complex (multi-cell) aquatic system

<sup>10</sup>Inflow is water, other than wastewater, that enters a sewer system from sources such as roof leaders, cellar drains, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross sections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters or other drainage. Excludes infiltration.

<sup>11</sup>Infiltration is stormwater and groundwater that enter a sewer system through such means as defective pipes, pipe joints, connections, or manholes. Excludes inflow.

Is any portion of your natural wastewater treatment system mechanically aerated at any time?

- Yes
- No

Physical and/or chemical treatment – indicate which types of physical-chemical treatment technologies are operated for nutrient removal. Check all that apply.

[NOTE: If ‘Physical and/or chemical treatment’ is indicated, sub-routine will present these physical and/or chemical unit process options.]

- Ammonia oxidation with chlorine (e.g., breakpoint chlorination)
- Ballasted flocculation
- Chemically-assisted clarification
- Chemical or advanced oxidation process
- Chemical phosphorous precipitation
- Denitrification filtration
- Gas stripping (e.g., ammonia stripping, air stripping)
- Ion exchange
- Media filtration, post-biological treatment (e.g., GAC, zeolite)
- Membrane treatment (e.g., reverse osmosis, ultrafiltration)
- Rapid or slow rate land treatment
- Sand filtration, post-biological treatment (e.g., rapid or slow sand filter)
- Other- *Enter a brief description of the facility type:*
- None of the above

17. What are the seasonal design temperatures of your treatment works?

Unknown

[NOTE: If checkbox for ‘Unknown’ is checked, sub-routine will not present this design temperature question to respondent and will proceed to Q18.]

Winter:   °C  °F

Summer:   °C  °F

18. Does your treatment works have the capability to be heated?

- Yes
- No

19. Indicate in Table 2 if your treatment works was designed to achieve, or now achieves through optimization, any of the following objectives.

**Table 2. Design and Operations Objectives**

Objective	Design	Optimization <small>What's This?<sup>12</sup></small>
Nutrient removal (Check all that apply)	<input type="checkbox"/> Nitrogen <input type="checkbox"/> Phosphorus <input type="checkbox"/> Not applicable	<input type="checkbox"/> Nitrogen <input type="checkbox"/> Phosphorus <input type="checkbox"/> Not applicable
Treatment system effluent quality (Check all that apply)	<input type="checkbox"/> Total Nitrogen $\leq$ 8 mg N/L <input type="checkbox"/> Total Phosphorous $\leq$ 1 mg P/L <input type="checkbox"/> Not applicable	<input type="checkbox"/> Total Nitrogen $\leq$ 8 mg N/L <input type="checkbox"/> Total Phosphorous $\leq$ 1 mg P/L <input type="checkbox"/> Not applicable
Organism growth (Check all that apply)	<input type="checkbox"/> Nitrosonomas <input type="checkbox"/> Nitrobacter <input type="checkbox"/> Phosphate Accumulating Organisms (PAOs) <input type="checkbox"/> Not applicable	<input type="checkbox"/> Nitrosonomas <input type="checkbox"/> Nitrobacter <input type="checkbox"/> Phosphate Accumulating Organisms (PAOs) <input type="checkbox"/> Not applicable
Nutrient recovery (e.g., struvite, ammonia, nitrogen, phosphorous, potassium, magnesium; check only one)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

20. Indicate in Table 3 if your treatment works has implemented, or is planning to implement, any capital upgrades or operational changes for (or resulted in) nutrient removal or energy efficiency (e.g., energy audit, energy optimization). Check all objectives that apply.

**Table 3. Historical and Future Changes**

Action	Within the past 10 years	Within the next 3 years
Capital Upgrades (e.g., baffles)	<input type="checkbox"/> Nutrient removal <input type="checkbox"/> Energy efficiency <input type="checkbox"/> Not applicable	<input type="checkbox"/> Nutrient removal <input type="checkbox"/> Energy efficiency <input type="checkbox"/> Not applicable
Operational Changes (e.g., adjusting residence time, change to mechanical aeration)	<input type="checkbox"/> Nutrient removal <input type="checkbox"/> Energy efficiency <input type="checkbox"/> Not applicable	<input type="checkbox"/> Nutrient removal <input type="checkbox"/> Energy efficiency <input type="checkbox"/> Not applicable

<sup>12</sup>Optimization: an activity that results in an improvement in the nutrient removal of an existing treatment works without requiring significant infrastructure upgrades.

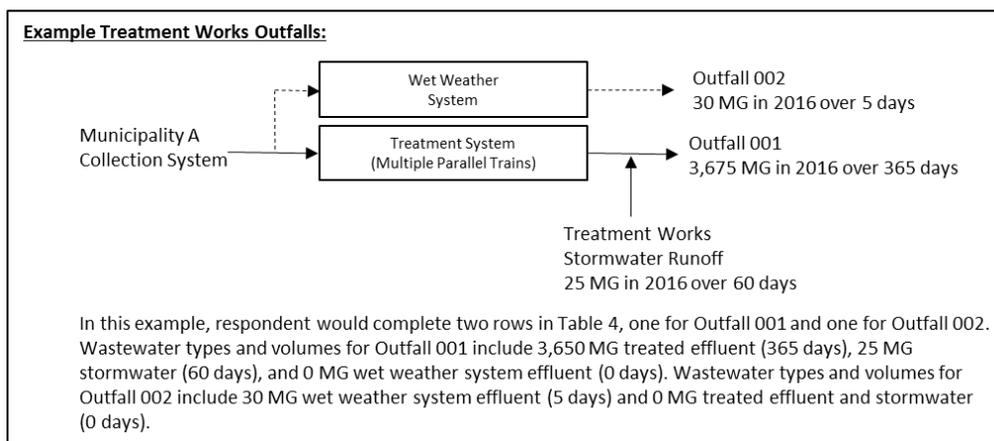
21. Does your treatment works have biochemical oxygen demand (BOD) and/or total suspended solids (TSS) percent removal provisions in its permit?

- Yes
- No

22. For each outfall from your treatment works in 2016 that received effluent from a treatment system and/or wet weather system, provide the outfall ID (as identified on your NPDES permit), latitude and longitude of each outfall, number of days of discharge in 2016, and volumes and types of wastewater discharged.

All values should be entered into Table 4. Enter zero (0) for any wastewater types and days of discharge that are not applicable. If you do not have an outfall ID(s), please enter (XX) in its place.

[NOTE: If 'Do not have a NPDES permit' was indicated for Q9, sub-routine will skip Q22 and proceed directly to Q23.]



**Table 4. Outfall Identification**

NPDES Outfall ID	Latitude	Longitude	Receiving Surface Water Name	Discharges in Calendar Year 2016		
				Type of Wastewater	Total Volume Discharged (MG)	Number of Days Discharged
	000°00'00.00"	000°00'00.00"	Name 1, Name 2	Treated Effluent <i>What's This?</i> <sup>13</sup>	<input type="text"/>	<input type="text"/>
				Wet Weather System Effluent <i>What's This?</i> <sup>14</sup>	<input type="text"/>	<input type="text"/>
				Stormwater <i>What's This?</i> <sup>15</sup>	<input type="text"/>	<input type="text"/>
				Total	<input type="text"/>	<input type="text"/>

[NOTE: Upon completion of the first row of Table 4, sub-routine will present this additional outfalls question.]

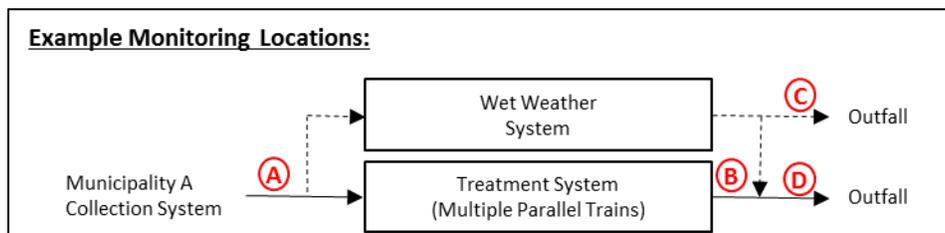
Do you have additional outfall IDs?  Yes  No

<sup>13</sup>Treated Effluent: the treated wastewater produced by a treatment system.

<sup>14</sup>Wet Weather System Effluent: the wastewater effluent produced by a wet weather system.

<sup>15</sup>Stormwater: rainwater or melted snow that runs off the treatment works' property.

23. Indicate in Table 5 if and where your treatment works monitors for ammonia. If your treatment works does not monitor for ammonia, please select 'No' for all responses.



**Table 5. Ammonia Monitoring Locations**

Nutrient monitored	Headworks <b>(A)</b>	Treatment System Effluent <b>(B)</b>	Wet Weather System Effluent <b>(C)</b>	Outfall <b>(D)</b>	Biosolids	Locations within the treatment works other than headworks and effluent
Ammonia	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)

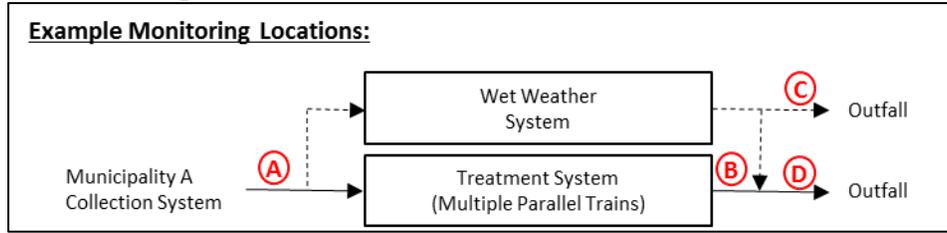
[NOTE: If any headworks, treatment system effluent, wet weather system effluent or outfall receive a 'Yes' response, sub-routine will present this average concentration question, and will present only those columns within Table 6 that received a 'Yes' response in Table 5.]

What are the average concentrations of ammonia in the treatment works measured at any of the following locations for 2016? Select the range that best approximates the concentration of ammonia in Table 6.

**Table 6. Average 2016 Ammonia Concentrations**

Nutrient Parameter	Average Concentration (mg/L)				Units Select the most applicable
	Headworks (untreated) <b>(A)</b>	Treatment System Effluent (treated) <b>(B)</b>	Wet Weather System Effluent <b>(C)</b>	Outfall <b>(D)</b>	
Ammonia	< 20 mg/L 20 – <45 mg/L 45 – <75 mg/L ≥75 mg/L	<0.1 mg/L 0.1 – <1 mg/L 1 – <3 mg/L ≥ 3 mg/L	<3 mg/L 3 – <45 mg/L ≥ 45 mg/L	<0.1 mg/L 0.1 – <1 mg/L 1 – <3 mg/L ≥ 3 mg/L	<input type="checkbox"/> NH <sub>3</sub> -N <input type="checkbox"/> NH <sub>3</sub>

24. Indicate in Table 7 if and where your treatment works monitors for nutrients other than ammonia. If your treatment works does not monitor for any of the additional nutrients, please select 'No' for all responses.



**Table 7. Nutrients Monitoring Locations**

Nutrient monitored	Headworks A	Treatment System Effluent B	Wet Weather System Effluent C	Outfall D	Biosolids	Locations within the treatment works other than headworks and effluent
Nitrogen other than ammonia	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)
Phosphorous	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)

[NOTE: If any headworks, treatment system effluent, wet weather system effluent or outfall receive a 'Yes' response, sub-routine will present this average concentrations question, and will present only those columns within Table 8 that received a 'Yes' response in Table 7.]

Of the nutrients you monitor, what are the average concentrations in the treatment works measured at any of the following locations for 2016? Select the range that best approximates the concentration of each of the following parameters in Table 8.

**Table 8. Average 2016 Nutrient Concentrations**

Nutrient Parameter	Average Concentration (mg/L)				Units Select the most applicable
	Headworks (untreated) <b>(A)</b>	Treatment System Effluent (treated) <b>(B)</b>	Wet Weather System Effluent <b>(C)</b>	Outfall <b>(D)</b>	
Total Nitrogen	<20 mg/L 20 – <40 mg/L 40 – <70 mg/L ≥70 mg/L Does not monitor	<4 mg/L 4 – <8 mg/L 8 – <12 mg/L ≥12 mg/L Does not monitor	<12 mg/L 12 – <40 mg/L ≥40 mg/L Does not monitor	<4 mg/L 4 – <8 mg/L 8 – <12 mg/L ≥12 mg/L Does not monitor	<input type="checkbox"/> N <input type="checkbox"/> N/A
Total Kjeldahl Nitrogen (TKN)	<30 mg/L 30 – <60 mg/L 60 – <100 mg/L ≥100 mg/L Does not monitor	<5 mg/L 5 – <10 mg/L 10 – <30 mg/L ≥30 mg/L Does not monitor	<30 mg/L 30 – <60 mg/L ≥60 mg/L Does not monitor	< 5 mg/L 5 – <10 mg/L 10 – <30 mg/L ≥30 mg/L Does not monitor	<input type="checkbox"/> TKN-N <input type="checkbox"/> TKN <input type="checkbox"/> N/A
Nitrate-Nitrite	Non-detect >0 mg/L Does not monitor	<4 mg/L 4 – <8 mg/L 8 – <12 mg/L ≥12 mg/L Does not monitor	<12 mg/L 12 – <40 mg/L ≥40 mg/L Does not monitor	<4 mg/L 4 – <8 mg/L 8 – <12 mg/L ≥12 mg/L Does not monitor	<input type="checkbox"/> NO <sub>3</sub> <sup>-</sup> /NO <sub>2</sub> <sup>-</sup> -N <input type="checkbox"/> NO <sub>3</sub> <sup>-</sup> /NO <sub>2</sub> <sup>-</sup> <input type="checkbox"/> N/A
Organic Nitrogen	<10 mg/L 10 – <15 mg/L 15 – <25 mg/L ≥25 mg/L Does not monitor	<5 mg/L 5 – <10 mg/L 10 – <20 mg/L ≥20 mg/L Does not monitor	<10 mg/L 10 – <25 mg/L ≥25 mg/L Does not monitor	<5 mg/L 5 – <10 mg/L 10 – <20 mg/L ≥20 mg/L Does not monitor	<input type="checkbox"/> N <input type="checkbox"/> N/A
Total Phosphorus	<4 mg/L 4 – <7 mg/L 7 – <12 mg/L ≥12 mg/L Does not monitor	<0.3 mg/L 0.3 – <1 mg/L 1 – <4 mg/L ≥4 mg/L Does not monitor	<4 mg/L 4 – <7 mg/L ≥7 mg/L Does not monitor	<0.3 mg/L 0.3 – <1 mg/L 1 – <4 mg/L ≥4 mg/L Does not monitor	<input type="checkbox"/> P <input type="checkbox"/> N/A
Orthophosphate	<3 mg/L 3 – <6 mg/L 6 – <10 mg/L ≥10 mg/L Does not monitor	<0.3 mg/L 0.3 – <1 mg/L 1 – <4 mg/L ≥4 mg/L Does not monitor	<3 mg/L 3 – <6 mg/L ≥6 mg/L Does not monitor	<0.3 mg/L 0.3 – <1 mg/L 1 – <4 mg/L ≥4 mg/L Does not monitor	<input type="checkbox"/> PO <sub>4</sub> -P <input type="checkbox"/> PO <sub>4</sub> <input type="checkbox"/> N/A

**REMARKS:** Provide any necessary notes or comments in this section. Operations are expected to fluctuate, but note in this section if any information is not representative of normal operations and why.