

U.S. ENVIRONMENTAL PROTECTION AGENCY

DRAFT

NATIONAL STUDY OF NUTRIENT REMOVAL AND SECONDARY TECHNOLOGIES: WRRF 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 3.5 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 water resource recovery facilities (WRRFs), primarily at those WRRFs that meet the definition of publicly owned treatment works (POTWs) under 40 CFR section 403.3(q). As part of this study, EPA will share statistically representative data on the profile and performance of WRRFs 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 WRRFs in the U.S., along with some basic characteristics of those WRRFs. EPA is conducting this first screener as a census to fully characterize the universe of WRRFs in the U.S. By collecting updated WRRF 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 WRRFs, 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 WRRFs in the United States that discharge wastewater. The questionnaire consists of 28 questions to collect information on WRRF identification, outfall identification, and WRRF 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 WRRFs, 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 “Draft Supporting Statement – WRRF 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 WRRF 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 WRRFs 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.

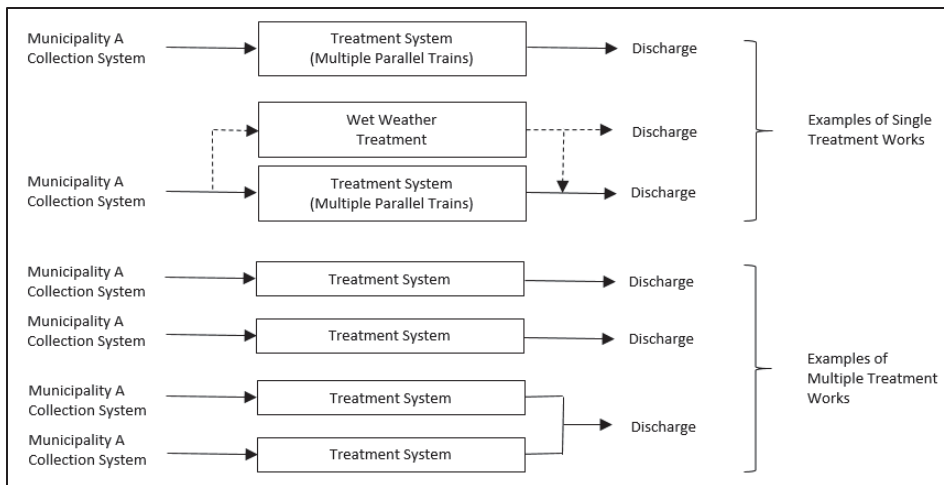


Figure 1. Example Treatment Works Configurations

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 qualify as WRRFs that 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 WRRF Screener Questionnaire Help Lines

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

E-mail..... wrrfhelp@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
xxxxx@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 WRRFs 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
WRRF 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

BNR	Biological Nutrient Removal
BOD	Biological Oxygen Demand
CSO	Combined Sewer Overflow
CWA	Clean Water Act
FRS	Facility Registry Services
GPD	Gallons per day
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
WRRF	Water Resource Recovery Facility

GLOSSARY

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

Biological Nutrient Removal (BNR) System – For purposes of this questionnaire, a BNR treatment system is one that meets all three of the following criteria: (1) designed to remove both nitrogen and phosphorus, (2) achieves typical design effluent quality targets of total nitrogen < 8 mg/L and total phosphorus <1 mg/L, and (3) designed and operated to promote the growth of phosphate accumulating organisms (PAOs), as well as Nitrosomonas and Nitrobacter organisms. An example of a BNR treatment system is the Modified Ludzack-Ettinger (MLE) process.

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 discharge from a combined sewer system at a point prior to the headworks of a publicly owned treatment works.

Commented [TR1]: Note:
BNR technologies are not the focus of this study and must be identified to exclude from future phases of the study.

How should EPA define BNR for the purposes of this study?

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, comminutors, 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.

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.

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 streets, lawns, and other sites.

Treated effluent – The treated wastewater produced by a treatment works.

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)]*

Water Resource Recovery Facility (WRRF) – Term used in place of wastewater treatment plant (WWTP or WTP), POTW, treatment works, and other conventional names that identifies the focus of the facility as being resource recovery, and reflects the products and benefits generated by wastewater treatment at the facility.

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 WRRF STUDY SCREENER QUESTIONNAIRE

OMB Control No. XXXX-XXXX
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?](#)¹ [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.]

- Duplicate questionnaire (Stop)
- Yes (Continue)

[NOTE: If answer to Q1 is "Duplicate Questionnaire", sub-routine will end survey activity. If answer to Q1 is 'Yes', sub-routine will pop-up this additional facility operations question.]

In addition to your treatment works, which of the following do you operate? Check all that apply.

- Municipal Separate Storm Sewer System (MS4)
- Combined Sewer Overflow (CSO)
- Stormwater/Industrial Stormwater System
- Septic System
- Drinking Water Treatment Plant
- Collection System
- No Additional Facility Operations
- Other- *Enter a brief description of the facility type:*

- No (Stop)

[NOTE: If answer to Q1 is 'No', sub-routine will pop-up this facility type question.]

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

¹ 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)]

- 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.

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?^{2,3} (Continue)
- Privately owned (owned by a private individual or organization) (Stop)
- Federally owned (owned by the U.S. federal government) (Stop)



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

Section B WRRF IDENTIFICATION

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

- Yes
- No – Enter facility name:

² 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)]

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)]

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

- Yes
- No – Enter mailing address

Street:

City: State: Zip Code:

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

- Yes
- No – Enter physical address

Street:

City: State: Zip Code:

Latitude: Longitude:

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

Name:

Street:

City: State: Zip Code:

Phone:

e-Mail:

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

FRS ID:

⁴ 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.

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

NPDES ID:

Section C OUTFALL IDENTIFICATION

9. Is your treatment works physically capable of directly discharging wastewater (treated or untreated) to a surface water?

- Yes – Enter surface water name:
- No

[NOTE: If answer to Q9 is 'No', sub-routine will pop-up discharge type question.]

- Discharges to **another WRRF** - Enter mailing address

[NOTE: If answer to discharge type question is "Discharges to another WRRF", sub-routine will pop-up this facility identification question.]

Facility name:

Street:

City: State: Zip Code:

FRS ID:

NPDES ID:

- Discharges to a non-publicly owned WRRF (e.g., privately owned treatment works)
- Does not discharge (e.g., 100% reuse, underground injection, evaporation, or land application)

⁵ 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.

10. For each **outfall** operated by your treatment works in 2016, provide the outfall ID (as identified on your NPDES permit), the latitude and longitude of each outfall, the average volume of water discharged from each outfall in 2016 in millions of gallons per day (MGD), and the type(s) of discharge (check all that apply). All values should be entered into Table 1 (Table 1). Indicate in the check boxes provided if your treatment works did not discharge or does not have an outfall ID.

- Did not discharge in 2016
- Do not have an outfall ID

Table 1. Treatment Works Outfall Location and Discharge

NPDES Outfall ID	Latitude	Longitude	2016 Daily Average Volume Discharged (MGD) by Type of Contribution from the Treatment Works	
			Check all that apply	
	000°00'00.0"	000°00'00.0"	<input type="checkbox"/> Treated Effluent <i>What's This?</i> ⁶	<input type="text"/>
			<input type="checkbox"/> Stormwater <i>What's This?</i> ⁷	<input type="text"/>
			<input type="checkbox"/> Combined Sewer Overflow <i>What's This?</i> ⁸	<input type="text"/>
			<input type="checkbox"/> Untreated Effluent	<input type="text"/>
			[Total]	<input type="text"/>

Commented [TR2]: EPA intends to capture volume by type of contributions.

Commented [TR3]: Note: Sub-routine will automatically tally total on webform

Section D WRRF OPERATIONS AND TREATMENT CHARACTERISTICS

11. 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

⁶ Treated Effluent: the treated wastewater produced by a treatment plant

⁷ Stormwater: rainwater or melted snow that runs off streets, lawns and other sites

⁸ 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.

12. What is the design capacity flow and average daily flow (MGD) of your treatment works in 2016? Do not include additional capacity used for primary treatment only.

Design Capacity Flow: *What's This?*⁹

Daily: MGD Peak Hour: MGD

Average Daily Flow: *What's This?*¹⁰

Daily: MGD Peak Hour: MGD

13. What percentage of the wastewater treated at your treatment works during dry weather was from each of the following sources in 2016? Estimate using best professional judgement. The sum of all responses should equal 100 %.

Residential: %

Commercial: %

Industrial: %

Other: %

Describe what comprises 'Other'

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

- 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

Commented [TR4]: Please note if there are there other industrial wastewaters that significantly contribute nutrients to the treatment works?

⁹ This is the maximum flow that the treatment works is capable by design to successfully process.

¹⁰ Also known as Current or Initial Daily Flow, this is the current average daily flow based on flow data from 2016.

- Pulp and paper manufacturing
- Steam electric power generating
- Oil and gas facilities

15. Which type of collection system(s) feed into the treatment works? Check the most applicable.

- Separate sewer collection systems only
- Combined sewer collection systems only
- Both separate sewer and combined sewer collection systems. – Enter percentage contributed by combined sewer collection system: %

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

Inflow What's This?¹¹

Average Daily Inflow: GPD or MGD

Infiltration What's This?¹²

Average Daily Infiltration: GPD or MGD

17. 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 technologies are operated. Check all that apply.

[NOTE: If Biological treatment is indicated, sub-routine will pop-up 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 reactors, fluidized-bed bioreactors, fixed bed reactors)
- 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)

Commented [TR5]: Note:
For subsequent study phases, EPA wants to ensure selected recipients represent of the variety of configurations of suspended growth: tank/reactor systems. Should EPA develop sub-routines to further classify these systems?

¹¹ 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.

¹² Infiltration is stormwater and groundwater that enter a sewer system through such means as defective pipes, pipe joints, connections, or manholes. Excludes inflow.

- Suspended growth: Aquatic treatment system (e.g., waste stabilization pond, wetland, facultative lagoon).

[NOTE: If “Suspended growth: Aquatic treatment system” is indicated, then sub-routine will pop-up simple or complex question and mechanical aeration question.]

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

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

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

- Yes
- No

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

[NOTE: If Physical and/or Chemical treatment is indicated, sub-routine will pop-up physical and chemical unit process options.]

- 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)

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

Winter: °C

Summer: °C

19. Does your treatment works have the capability of being heated?

- Yes
- No

20. Does your treatment works experience seasonal variability throughout the year (e.g., > 10 percent (%) variation in factors such as population served, influent flow, treatment works operations)?

- Yes
- No

21. During wet weather, does your treatment works divert flow to another system not used during dry weather (e.g., bypass)? **Please see Figure 1 in the questionnaire instructions for clarification.**

- Yes
- No

22. Is your treatment works a Biological Nutrient Removal (BNR) system? A BNR treatment works meets all three of the following criteria. Please answer all three questions.

Does your treatment works remove both nitrogen and phosphorous?	Choose an item (Yes/No)
Does your treatment works achieve the following typical design effluent quality targets? Total Nitrogen \leq 8 mg N/L and Total Phosphorous \leq 1 mg P/L	Choose an item (Yes/No)
Is your treatment works designed and operated to promote the growth of phosphate accumulating organisms (PAOs) and Nitrosomonas and Nitrobacter organisms?	Choose an item (Yes/No)

23. Does your treatment works recover energy (e.g., heat, biogas, etc.)?

- Yes
- No

24. Does your treatment works recover any of the following resources? Check all that apply.

- Nutrients (e.g., struvite, ammonia, nitrogen, phosphorous, potassium, magnesium)
- Metals

Commented [TR6]: Note: BNR technologies are not the focus of this study and must be identified to exclude from future phases of the study. How should EPA define BNR for the purposes of this study?

- Water (e.g., direct potable reuse, indirect potable reuse)
- Carbon
- Processed organic matter for use as fertilizer or soil amendments

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

- Yes
- No

26. Does your treatment works monitor for ammonia?

Nutrient monitored for	Headworks	Effluent	Locations within the treatment works other than headworks and effluent	Biosolids
Ammonia	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)	Choose an item (Yes/No)

[NOTE: If headworks or effluent are indicated 'Yes', sub-routine will pop-up average concentrations question.]

What are the average annual concentrations of ammonia in the treatment works' headworks and treated effluent? Select the range that best approximates the concentration of each of the following parameters in Table 2.

Table 2. Average Nutrient Concentrations of Headworks and Effluent

Nutrient Parameter	Average Concentration (mg/L)	
	Headworks (untreated)	Effluent (treated)
Ammonia	< 20.0 mg/L 20.0 – <45.0 mg/L 45.0 – <75.0 mg/L ≥75.0 mg/L Do not monitor	<0.10 mg/L 0.10 – <1.0 mg/L 1.0 – <3.0 mg/L ≥ 3.0 mg/L Do not monitor

27. Does your treatment works monitor for nutrients other than ammonia (e.g., nitrogen, phosphorous)?

Nutrient monitored for:	Headworks	Effluent	Locations within the treatment works other than headworks and effluent	Biosolids
Nitrogen other than ammonia	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)

[NOTE: If headworks or effluent are indicated “Yes”, sub-routine will pop-up average concentrations question.]

Of the nutrients you monitor, what are the average annual concentrations in the treatment works’ headworks and treated effluent? Select the range that best approximates the concentration of each of the following parameters in Table 3.

Table 3. Average Nutrient Concentrations of Headworks and Effluent

Nutrient Parameter	Average Concentration (mg/L)	
	Headworks (untreated)	Effluent (treated)
Total Nitrogen	< 20.0 mg/L 20.0 – <40.0 mg/L 40.0 – <70 mg/L ≥70 mg/L Do not monitor	<4.0 mg/L 4.0 – <8.0 mg/L 8.0 – <12.0 mg/L ≥12.0 mg/L Do not monitor
Total Kjeldahl Nitrogen (TKN)	<30.0 mg/L 30.0 – <60.0 mg/L 60.0 – <100 mg/L ≥100 mg/L Do not monitor	< 5.0 mg/L 5.0 – <10.0 mg/L 10.0 – <30.0 mg/L ≥30.0 mg/L Do not monitor
Total Phosphorus	< 4.0 mg/L 4.0 – <7.0 mg/L 7.0 – <12.0 mg/L ≥12.0 mg/L Do not monitor	<0.30 mg/L 0.3 – <1.0 mg/L 1.0 – <4.0 mg/L ≥4.0 mg/L Do not monitor

28. Indicate if your treatment works has experienced, or is planning to experience, any significant capital upgrades or operational changes to achieve any of the objectives listed in Table 4.

Table 4. Historical and Future Changes

Objective	Within the past 10 years	Within the next 10 years
Nutrient Removal	Choose an item (Yes/No)	Choose an item (Yes/No)
Resource Recovery	Choose an item (Yes/No)	Choose an item (Yes/No)
Wet Weather Flow Management	Choose an item (Yes/No)	Choose an item (Yes/No)

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.

Commented [TR7]: Sub-routine will pop-up option to provide additional remarks on individual questions in web form.