National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for **City of Wapakoneta Water Reclamation Facility (WRF)**

Public Notice No.: 206565
Public Notice Date: October 2, 2024
Comment Period Ends: November 1, 2024

Ohio EPA Permit No.: **2PD00019*SD**
Application No.: **OH0027952**

Name and Address of Applicant:
City of Wapakoneta
P.O. Box 269
Wapakoneta, OH 45895

Name and Address of Facility Where Discharge Occurs:
Wapakoneta WRF
201 Herbstritt Court
Wapakoneta, OH 45895
Auglaize County

Receiving Water: **Auglaize River**

Subsequent Stream Network: **Maumee River, Lake Erie**

INTRODUCTION

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations (CFR), Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency (Ohio EPA), as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act (CWA) and Ohio Water Pollution Control Law (Ohio Revised Code [ORC] 6111). Decisions to award variances to Water Quality Standards (WQS) or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Antidegradation provisions in Ohio Administrative Code (OAC) Chapter 3745-1 describe the conditions under which water quality may be lowered in surface waters. No antidegradation review was necessary.

Effluent limits based on available treatment technologies are required by Section 301(b) of the CWA. Many of these have already been established by the United States Environmental Protection Agency (U.S. EPA) in the effluent guideline regulations (a.k.a. categorical regulations) for industry categories in 40 CFR Parts 405-499. Technology-based regulations for publicly-owned treatment works are listed in the Secondary Treatment Regulations (40 CFR Part 133). If regulations have not been established for a category of dischargers, the director may establish technology-based limits based on best professional judgment (BPJ).

Ohio EPA reviews the need for water-quality-based limits on a pollutant-by-pollutant basis. Wasteload allocations (WLAs) are used to develop these limits based on the pollutants that have been detected in the discharge, and the receiving water's assimilative capacity. The assimilative capacity depends on the flow in the water receiving the discharge, and the concentration of the pollutant upstream. The greater the upstream flow, and the lower the upstream concentration, the greater the assimilative capacity is. Assimilative capacity may represent dilution (as in allocations for metals), or it may also incorporate the break-down of pollutants in the receiving water (as in allocations for oxygen-demanding materials).

The need for water-quality-based limits is determined by comparing the WLA for a pollutant to a measure of the effluent quality. The measure of effluent quality is called Projected Effluent Quality (PEQ). This is a statistical measure of the average and maximum effluent values for a pollutant. As with any statistical method, the more data that exists for a given pollutant, the more likely that PEQ will match the actual observed data. If there is a small data set for a given pollutant, the highest measured value is multiplied by a statistical factor to obtain a PEQ; for example if only one sample exists, the factor is 6.2, for two samples - 3.8, for three samples - 3.0. The factors continue to decline as samples sizes increase. These factors are intended to account for effluent variability, but if the pollutant concentrations are fairly constant, these factors may make PEQ appear larger than it would be shown to be if more sample results existed.

SUMMARY OF PERMIT CONDITIONS

The effluent limits and/or monitoring requirements proposed for all parameters are the same as in the current permit, except those listed below.

Numerous new or lower effluent limits associated with the facility expansion to an average daily design flow of 6.0 MGD are proposed:

- Technology-based effluent limits associated with performance of the secondary treatment system are proposed at new Internal Monitoring Station 603, to be monitored prior to flow augmentation;
- Water quality-based effluent limits (except for total filterable residue) developed to be protective of water quality standards are proposed at Outfall 001, to be monitoring following flow augmentation;
- Water quality-based effluent limits for total filterable residue are proposed in multiple flow tiers, applicable to Outfalls 020, 021, 022, and 023.

New effluent limits for dibromochloromethane, cadmium and selenium are proposed due to reasonable potential to exceed the wasteload allocation. A schedule to attain compliance with the new limits is proposed in Part I,C of the permit.

A new limit for carcinogenic additivity is proposed. New monitoring for bromodichloromethane, bromoform, chloroform, and 2,4,6-trichlorophenol is proposed to support additivity assessment. A schedule to attain compliance with the new limits is proposed in Part I,C of the permit.

In accordance with Ohio Administrative Code (OAC) 3745-33-07, it has been determined that the effluent from Wapakoneta WRF shows acute and chronic toxicity to both *Ceriodaphnia dubia* and *Pimephales promelas*. Acute and chronic effluent limits are proposed.

New monitoring stations 586 and 588 are proposed for sewage sludge or biosolids disposal via approved landfill and transfer to another NPDES permit holder. Station 582 is proposed to be removed.

Monitoring for *E. coli* at upstream monitoring station 801 and downstream monitoring station 901 is proposed to change to once per two weeks from June through August. The more frequent monitoring over a shorter period will facilitate recreation use attainment assessment in the receiving stream.

Monitoring for total cyanide at station 901 is proposed to be removed.

A schedule of compliance for post-construction compliance monitoring associated with combined sewer overflow (CSO) control is included in Part I.C of the permit.

In Part I,C of the permit, a 18-month compliance schedule is proposed for the City to submit a technical justification for local industrial user limits for several pollutants, including total phosphorus.

In Part II of the permit, special conditions are included that address sanitary sewer overflow (SSO) reporting; operator certification, minimum staffing and operator of record; whole effluent toxicity (WET) testing; storm water compliance; CSO public notification; pretreatment program requirements; and outfall signage.

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PROCEDURES FOR PARTICIPATION IN THE FORMULATION OF FINAL DETERMINATIONS

The draft action shall be issued as a final action unless the Director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty days of the date of the Public Notice, any person may request or petition for a public meeting for presentation of evidence, statements or opinions. The purpose of the public meeting is to obtain additional evidence. Statements concerning the issues raised by the party requesting the meeting are invited. Evidence may be presented by the applicant, the state, and other parties, and following presentation of such evidence other interested persons may present testimony of facts or statements of opinion.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be emailed to HClerk@epa.ohio.gov or mailed to:

Legal Records Section
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted by email to epa.dswcomments@epa.ohio.gov (preferred method) or delivered in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049

The Ohio EPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or the draft permit, contact David Brumbaugh at (614) 644-2138 or david.brumbaugh@epa.ohio.gov.

INFORMATION REGARDING CERTAIN WATER QUALITY BASED EFFLUENT LIMITS

This draft permit may contain proposed water-quality-based effluent limits (WQBELs) for parameters that **are not** priority pollutants. (See the following link for a list of the priority pollutants: https://epa.ohio.gov/static/Portals/35/pretreatment/Pretreatment_Program_Priority_Pollutant_Detection_Limits.pdf.) In accordance with ORC 6111.03(J)(3), the Director established these WQBELs after considering, to the extent consistent with the Federal Water Pollution Control Act, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties from those wastes and to evidence relating to conditions calculated to result from that action and their relation to benefits to the people of the state and to

accomplishment of the purposes of this chapter. This determination was made based on data and information available at the time the permit was drafted, which included the contents of the timely submitted NPDES permit renewal application, along with any and all pertinent information available to the Director.

This public notice allows the permittee to provide to the Director for consideration during this public comment period additional site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness for achieving compliance with the proposed final effluent limitations for these parameters. The permittee shall email to epa.dswcomments@epa.ohio.gov (preferred method) or deliver or mail this information to:

Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049

Should the applicant need additional time to review, obtain or develop site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness of achieving compliance with these limitations, a written request for any additional time shall be sent to the above address no later than 30 days after the Public Notice Date on Page 1.

Should the applicant determine that compliance with the proposed WQBELs for parameters other than the priority pollutants is technically and/or economically unattainable, the permittee may submit an application for a variance to the applicable WQS used to develop the proposed effluent limitation in accordance with the terms and conditions set forth in OAC 3745-33-07(D). The permittee shall submit this application to the above address no later than 30 days after the Public Notice Date.

Alternately, the applicant may propose the development of site-specific WQS pursuant to OAC 3745-1-39. The permittee shall submit written notification regarding their intent to develop site specific WQS for parameters that are not priority pollutants to the above address no later than 30 days after the Public Notice Date.

LOCATION OF DISCHARGE/RECEIVING WATER USE CLASSIFICATION

Wapakoneta WRF discharges to Auglaize River at River Mile 84.9. Figure 1 shows the approximate location of the facility.

This segment of the Auglaize River is described by Ohio EPA River Code: 04-100, Hydrologic Unit Code: 04100007-01-05, County: Auglaize, Ecoregion: Eastern Corn Belt Plains. The Auglaize River is designated for the following uses under Ohio's WQS (OAC 3745-1-11): Warmwater Habitat, Agricultural Water Supply, Industrial Water Supply, Primary Contact Recreation.

Use designations define the goals and expectations of a waterbody. These goals are set for aquatic life protection, recreation use and water supply use, and are defined in the Ohio WQS (OAC 3745-1-07). The use designations for individual waterbodies are listed in rules -08 through -32 of the Ohio WQS. Once the goals are set, numeric WQS are developed to protect these uses. Different uses have different water quality criteria.

Use designations for aquatic life protection include habitats for coldwater fish and macroinvertebrates, warmwater aquatic life and waters with exceptional communities of warmwater organisms. These uses all meet the goals of the federal CWA. Ohio WQS also include aquatic life use designations for waterbodies which cannot meet the CWA goals because of human-caused conditions that cannot be remedied without causing fundamental changes to land use and widespread economic impact. The dredging and clearing of some small streams to support agricultural or urban drainage is the most common of these conditions. These streams are given Modified Warmwater or Limited Resource Water designations.

Recreation uses are defined by the depth of the waterbody and the potential for wading or swimming. Uses are defined for bathing waters, swimming/canoeing (Primary Contact Recreation) and wading only (Secondary Contact which are generally waters too shallow for swimming or canoeing).

Water supply uses are defined by the actual or potential use of the waterbody. Public Water Supply designations apply near existing water intakes so that waters are safe to drink with standard treatment. Most other waters are designated for agricultural water supply and industrial water supply.

FACILITY DESCRIPTION

Wapakoneta WRF was constructed in 1937 and is currently being upgraded. The expanded average design flow is 6.0 million gallons per day (MGD) and the peak hydraulic capacity is projected to be 12 MGD. Wapakoneta WRF serves the City of Wapakoneta and unincorporated portions of Auglaize County, a population of approximately 10,500. Wapakoneta WRF has the following treatment processes (Figure 2):

- Influent pumping
- Bar screening
- Grit & scum removal
- Preliminary treatment (6mm perforated plate screens)
- Activated sludge – biological nutrient removal
- Alum addition
- Secondary clarification
- Chlorination/dechlorination
- Post-aeration

Wapakoneta WRF has a headworks bypass, monitored as station 602. When the facility's hydraulic capacity is exceeded, wastewater is stored in two equalization basins, which provide a total storage capacity of 3.8 MG. If

the capacity of the basin is exceeded, wastewater overflows, bypasses primary and secondary treatment, and blends with secondary effluent. The blended flow is treated by disinfection and post aeration systems, is monitored at final effluent station 001, then discharges to the receiving stream. This bypass is projected to be eliminated as part of the facility expansion project.

The Wapakoneta WWTP has 80% separated sewers and 20% combined sewers in the collection system. The City submitted its *Consolidated Plan for SSO Elimination and CSO Reduction* on November 20, 2020 and an addendum on April 1, 2021, which was approved by Ohio EPA on March 4, 2022. The Consolidated Plan presented an integrated approach to addressing the City's wastewater needs. The Consolidated Plan proposed to control discharges from the two CSO outfalls in the collection system to four events per typical year and to eliminate SSOs in the North Interceptor. The Consolidated Plan is largely dependent on the treatment facility expansion, therefore control of CSO and SSO discharges is proposed to be completed by September 1, 2024. Following completion of the control projects, the City will implement its Post Construction Compliance Monitoring Plan, a compliance schedule for which is proposed in Part I,C of the permit.

The City of Wapakoneta has an approved pretreatment program. The City has one non-categorical, significant user and four categorical users that discharge 0.88 MGD.

The City of Wapakoneta's potable water comes from groundwater. The City's water treatment plant recently added lime softening treatment to reduce total filterable residue contributions to Wapakoneta WRF.

Wapakoneta WRF utilizes the following sewage sludge treatment processes (Figure 2):

- Lime stabilization
- Mechanical dewatering – filter press

Table 1 shows the last five years of sludge removed from Wapakoneta WRF. Treated sludge is either distributed or land applied for beneficial use. New monitoring stations 586 and 588 are proposed for sewage sludge or biosolids disposal in an approved landfill or transfer to another NPDES permit holder. Station 582 is proposed to be removed.

Director's Final Findings and Orders were issued to the City of Wapakoneta on February 6, 2019 regarding excessive discharge of total filterable residue. In accordance with the DFFO's the City submitted a general plan which proposed the facility expansion to 6.0 MGD and the implementation of a flow augmentation process to decrease the toxic impacts of the effluent constituents, which must be completed by September 2024. The DFFOs also require the City to develop and implement a biomonitoring program for the Auglaize River and, if a decline in biological performance is observed, the City must develop and implement a restoration plan.

DESCRIPTION OF EXISTING DISCHARGE

Table 2 presents the effluent violations for Wapakoneta WRF during the previous five years. The facility expansion and a new flow augmentation process, currently planned to be completed by September 2024, may address many of these issues.

Table 3 presents the average annual effluent flow rate for Wapakoneta WRF for the previous five years. Wapakoneta WRF has an estimated infiltration/inflow (I/I) rate of 0.3 MGD. Wapakoneta WRF has implemented a manhole rehabilitation and private abatement programs to reduce I/I.

Table 4 presents the number of SSOs reported by Wapakoneta WRF for the previous five years. SSOs are reported at station 300.

Table 5 presents data characterizing bypass activity at Wapakoneta WRF for the previous five years. Bypasses are reported at station 602.

Table 6 presents data characterizing CSO activity at Wapakoneta WRF during the previous five years. Wapakoneta WRF has 2 CSOs.

Table 7 presents data characterizing the annual and seasonal total phosphorus load from Wapakoneta WRF during the previous five years.
Table 8 presents chemical specific data compiled from data reported in annual pretreatment reports and data collected by Ohio EPA. Because this data is substantially identical to the application requirements in CFR 122.21(j), the Director has waived the requirement for submittal of supplemental effluent testing data as part of the NPDES renewal application.

Table 9 presents a summary of unaltered Discharge Monitoring Report (DMR). Data are presented for the period January 2018 through December 2023, and current permit limits are provided for comparison.

Table 10 summarizes the chemical specific data for outfall 001 by presenting the average and maximum PEQ values.

Table 11 summarizes the results of acute and chronic Whole Effluent Toxicity (WET) tests of the final effluent, using the water flea (*Ceriodaphnia dubia*) and fathead minnow (*Pimephales promelas*) as test organisms.

ASSESSMENT OF IMPACT ON RECEIVING WATERS

Pursuant to Section 303(d) of the Clean Water Act, each state is required to develop and submit a list to US EPA of its impaired and threatened waters (e.g. stream/river segments, lakes). For each water on the list, the state identifies the pollutant(s) causing the impairment, when known. The Dry Run – Auglaize River watershed assessment unit, which includes the Auglaize River in the vicinity of Wapakoneta WRF, is listed as impaired for aquatic life and recreation uses on Ohio's 303(d) list.

The Total Maximum Daily Load (TMDL) program focuses on identifying and restoring polluted rivers, streams, lakes and other surface water bodies. A TMDL is a written, quantitative assessment of water quality problems in a water body and contributing sources of pollution. It specifies the amount a pollutant needs to be reduced to meet water quality standards (WQS), allocates pollutant load reductions, and provides the basis for taking actions needed to restore a water body. A Total Daily Maximum Load (TMDL) report was approved for the Auglaize River in August 2004.

An assessment of the impact of a permitted point source on the immediate receiving waters includes an evaluation of the available chemical/physical, biological, and habitat data which have been collected by Ohio EPA pursuant to the Five-Year Basin Approach for Monitoring and NPDES Reissuance. Other data may be used provided it was collected in accordance with Ohio EPA methods and protocols as specified by the Ohio WQS and Ohio EPA guidance documents. Other information which may be evaluated includes, but is not limited to: NPDES permittee self-monitoring data; effluent and mixing zone bioassays conducted by Ohio EPA, the permittee, or U.S. EPA.

In evaluating this data, Ohio EPA attempts to link environmental stresses and measured pollutant exposure to the health and diversity of biological communities. Stresses can include pollutant discharges (permitted and unpermitted), land use effects, and habitat modifications. Indicators of exposure to these stresses include whole effluent toxicity tests, fish tissue chemical data, and fish health biomarkers (for example, fish blood tests).

Use attainment is a term which describes the degree to which environmental indicators are either above or below criteria specified by the Ohio WQS (OAC 3745-1). Assessing use attainment status for aquatic life uses primarily relies on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-1). These criteria apply to rivers and streams outside of mixing zones. Numerical biological criteria are based on measuring several characteristics of the fish and macroinvertebrate communities; these characteristics are combined into multimetric biological indices including the Index of Biotic Integrity and modified Index of Well-Being, which indicate the response of the fish community, and the Invertebrate Community Index, which indicates the response of the macroinvertebrate community. Numerical criteria are broken down by ecoregion, use designation, and stream or river size. Ohio has five ecoregions defined by common topography, land use, potential vegetation and soil type.

Three attainment status results are possible at each sampling location -full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices fails meet the biocriteria. Nonattainment means that either none of the applicable indices meet the biocriteria or one of the organism groups indicates poor or very poor performance. An aquatic life use attainment table (see Table 12) is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (i.e., full, partial, or non), the Qualitative Habitat Evaluation Index, and comments and observations for each sampling location.

Based on a survey conducted in 1991, the Auglaize River in the vicinity of Wapakoneta is impaired for aquatic life use due to nutrient enrichment and other contaminants, with combined sewer overflows and proximity to a low-head dam as contributing sources. The impairment was just upstream of the Wapakoneta WRF outfall, therefore the 2004 TMDL did not assign wasteload allocations to Outfall 001. CSO discharges have since been reduced significantly through implementation of the long term control plan.

Ohio EPA conducted another watershed survey in 2019, the data from which has been validated but not yet published or subject to public comment. The preliminary data suggest that the Auglaize River in the vicinity of Wapakoneta WRF is in full attainment of the aquatic life use but impaired for recreation use due to high bacteria levels. This survey was conducted prior to the facility expansion and arrival of a new industrial user.

In September 2023, the Maumee Watershed Nutrient Total Maximum Daily Load (TMDL) Report was approved by USEPA. The TMDL was developed to reduce phosphorus loadings from the Maumee River to restore beneficial uses of drinking water, aquatic life, and recreation in the following assessment units: Lake Erie Shoreline, Open Water, and Islands of the Western Basin. The TMDL assigned an individual wasteload allocation to Wapakoneta WRF of 1,500 kg of total phosphorus for the critical season (March through July). Compliance with this individual wasteload allocation will be regulated through the Maumee Watershed Total Phosphorus NPDES General Permit, under which Wapakoneta WRF has been granted coverage.

Both TMDL reports and other documents associated with the Upper Auglaize River are available through the Ohio EPA, Division of Surface Water website at:
https://epa.ohio.gov/divisions-and-offices/surface-water/reports-data/maumee-river-watershed

DEVELOPMENT OF WATER-QUALITY-BASED EFFLUENT LIMITS

Determining appropriate effluent concentrations is a multiple-step process in which parameters are identified as likely to be discharged by a facility, evaluated with respect to Ohio water quality criteria, and examined to determine the likelihood that the existing effluent could violate the calculated limits.

Parameter Selection
Effluent data for the Wapakoneta WRF were used to determine what parameters should undergo WLA. The parameters discharged are identified by the data available to Ohio EPA, DMR data submitted by the permittee, compliance sampling data collected by Ohio EPA, and any other data submitted by the permittee, such as priority pollutant scans required by the NPDES application or by pretreatment, or other special conditions in the NPDES permit. The sources of effluent data used in this evaluation are as follows:

Self-monitoring data (DMR)	January 2019 through December 2023
Pretreatment data	2019-2023
Ohio EPA compliance sampling data	2019

Statistical Outliers and Other Non-representative Data
The data were examined and the following values were removed from the evaluation as non-representative data:

- Mercury – November 18, 2020 (16.4 ng/L) – removed as outlier, five times higher than next value.

This data is evaluated statistically, and PEQ values are calculated for each pollutant. Average PEQ (PEQ_{avg}) values represent the 95th percentile of monthly average data, and maximum PEQ (PEQ_{max}) values represent the 95th percentile of all data points (see Table 10). See Modeling Guidance #1 for more information on PEQ calculations, available through the Ohio EPA, Division of Surface Water website at:
https://www.epa.ohio.gov/portals/35/guidance/model1.pdf

The PEQ values are used according to Ohio rules to compare to applicable WQS and allowable WLA values for each pollutant evaluated. Initially, PEQ values are compared to the applicable average and maximum WQS. If both PEQ values are less than 25 percent of the applicable WQS, the pollutant does not have the reasonable potential to cause or contribute to exceedances of WQS, and no WLA is done for that parameter. If either PEQ_{avg} or PEQ_{max} is greater than 25 percent of the applicable WQS, a WLA is conducted to determine whether the parameter exhibits reasonable potential and needs to have a limit or if monitoring is required (see Table 13).

Wasteload Allocation
For those parameters that require a WLA, the results are based on the uses assigned to the receiving waterbody in OAC 3745-1. Dischargers are allocated pollutant loadings/concentrations based on the Ohio WQS (OAC 3745-1). Most pollutants are allocated by a mass-balance method because they do not break down in the receiving water. By rule, mixing zones are not authorized for pollutants, such as mercury, which have been designated as bioaccumulative chemicals of concern (BCCs). For BCCs, the WLA is set equal to the respective WQS value.

The methodology employed generally depends on whether the facility is considered a direct discharger to a (1) free-flowing receiving water/stream or (2) non-flowing receiving water/Lake. For free-flowing streams, WLAs for both average and maximum criteria are performed using the following general equation:

Discharger WLA = (Downstream Flow x WQS) - (Upstream Flow x Background Concentration).

Discharger WLAs are divided by the discharge flow so that the allocations are expressed as concentrations.

The applicable waterbody uses for this facility's discharge and the associated stream design flows are as follows:

Aquatic life (Warmwater Habitat)		
Toxics (metals, organics, etc.)	Average	Annual 7Q10
	Maximum	Annual 1Q10
Ammonia	Average	Summer 30Q10

	Winter 30Q10
Wildlife	Annual 90Q10
Agricultural Water Supply	Harmonic mean flow
Human Health (nondrinking)	Harmonic mean flow

Allocations are developed using a percentage of stream design flow as specified in Table 14, and allocations cannot exceed the Inside Mixing Zone Maximum (IMZM) criteria. The data used in the WLA are listed in Table 13 and Table 14. The WLA results to maintain all applicable criteria are presented in Table 15.

Whole Effluent Toxicity Wasteload Allocation

Whole effluent toxicity (WET) is the total toxic effect of an effluent on aquatic life measured directly with a toxicity test. Acute WET measures short term effects of the effluent while chronic WET measures longer term and potentially more subtle effects of the effluent. WQC for WET are 0.3 TUa for acute toxicity and 1.0 TUc for chronic toxicity (OAC 3745-1-44).

There are two separate reasonable potential procedures in Ohio - one for the Lake Erie watershed and one for the Ohio River watershed. Dischargers in the Ohio River watershed are assessed using OAC 3745-33-07(B). Dischargers in the Lake Erie watershed are assessed in accordance with the "Great Lakes Water Quality Initiative Implementation Procedures" contained in 40 CFR Part 132, Appendix F, Procedure 6.

The WLA calculations for WET are similar to those for aquatic life criteria - using the chronic toxicity unit (TUc) and 7Q10 flow for the average and the acute toxicity unit (TUa) and 1Q10 flow for the maximum. WET WLAs are based on meeting the values of 0.3 TUa and 1.0 TUc downstream of the discharge, and include any available dilution. These values are the levels of effluent toxicity that should not cause instream toxicity during critical low-flow conditions. WLAs for acute toxicity are capped at 1.0 TUa unless the discharger demonstrates that an Area-of-Initial-Mixing (AIM) exists under OAC 3745-1-06, or that one of the factors in OAC 3745-33-07(B)(5)-(9) allows a higher TUa limit to be granted. For the purposes of establishing WET limitations, the values of 1.0 TUa and 1.0 TUc are the most restrictive limitations that can be applied in NPDES permits [OAC 3745-33-07(B)(10)].

For Wapakoneta WRF, the WLA values for outfall 001 are 0.4 TUa and 1.06 TUc.

The chronic toxicity unit (TUc) is defined as 100 divided by the estimate of the effluent concentration which causes a 25% reduction in growth or reproduction of test organisms (IC25):

$$TUc = 100/IC25$$

This equation applies outside the mixing zone for warmwater, modified warmwater, exceptional warmwater, coldwater, and seasonal salmonid use designations except when the following equation is more restrictive (*Ceriodaphnia dubia* only):

TUc = 100/geometric mean of No Observed Effect Concentration and Lowest Observed Effect Concentration

The acute toxicity unit (TUa) is defined as 100 divided by the concentration in water having 50% chance of causing death to aquatic life (LC50) for the most sensitive test species:

$$TUa = 100/LC50$$

This equation applies outside the mixing zone for all designated waters. Based on the above, a value of 1.0 TUa is the lowest value that can be calculated using the equation. TUa values between 0.2 and 1.0 are based on an interpolation of toxic effects where an LC50 cannot be identified.

When the acute WLA is less than 1.0 TUa, it may be defined as a ratio of the stream dilution to the effluent flow:

Acute Dilution Ratio (downstream flow to discharger flow)	Allowable Effluent Toxicity (percent effects in 100% effluent)
up to 2 to 1	30
greater than 2 to 1 but less than 2.7 to 1	40
2.7 to 1 to 3.3 to 1	50

$$\text{Acute Dilution Ratio} = \frac{1Q10 + [\text{WWTP flow rate}]}{[\text{WWTP flow rate}]} = \frac{1.49 \text{ cfs} + 9.283 \text{ cfs}}{9.283 \text{ cfs}} = 1.16$$

The acute WLA for Wapakoneta WRF can be expressed as 30 percent mortality in 100 percent effluent based on the dilution ratio of 1.16 to 1. If the acute dilution ratio is less than 3.3 to 1.0, and there is evidence that effluent values between 0.3 TUa and 1.0 TUa cause or contribute to violations of WQS, the permittee may be required to investigate and remediate toxicity in this range.

REASONABLE POTENTIAL/EFFLUENT LIMITS/MANAGEMENT DECISIONS

After appropriate effluent limits are calculated, the reasonable potential of the discharger to violate the WQS must be determined. Each parameter is examined and placed in a defined "group". Parameters that do not have a WQS or do not require a WLA based on the initial screening are assigned to either group 1 or 2. For the allocated parameters, the preliminary effluent limits (PEL) based on the most restrictive average and maximum WLAs are selected from Table 15. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 10, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of the allocated value [($PEQ_{avg} \div PEL_{avg}$) X 100, or ($PEQ_{max} \div PEL_{max}$) X 100)], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 16.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Tables 17, 18, and 19 present the effluent limits and monitoring requirements proposed for Wapakoneta WRF Outfall 001, Internal Monitoring Station 603, and multiple outfalls associated with total filterable flow tiers, respectively, and the bases for their recommendations. Unless otherwise indicated, the monitoring frequencies proposed in the permit are continued from the existing permit.

INTERNAL MONITORING STATION 603

This monitoring station is located after secondary treatment but before treated effluent is mixed with augmentation flows. Limits and monitoring associated with ensuring proper performance of the secondary treatment system are applied at this station.

Ammonia, CBOD5, Dissolved Oxygen, and TSS

The limits proposed for ammonia, 5-day carbonaceous biochemical oxygen demand (CBOD5), dissolved oxygen, and total suspended solids (TSS) are technology-based treatment standards included in OAC 3745-1-05, Best Available Demonstrated Control Technology. The proposed ammonia limits were evaluated using the wasteload allocation procedure and were determined to be protective of water quality standards.

Flow Rate

Monitoring for this parameter is proposed to continue to evaluate the performance of the treatment plant.

OUTFALL 001

This monitoring station is located downstream of the point where treated effluent and augmentation flows are mixed and represents an "end-of-pipe" condition. Limits and monitoring associated with water quality standards are applied at this station.

Total Residual Chlorine
A daily effluent limit for total residual chlorine is proposed as a plant design value which is based on protection of the inside mixing zone maximum (IMZM) and outside mixing zone maximum (OMZM) PELs. The most stringent daily maximum criterion is applied and is to be met anytime chlorine is being utilized for effluent disinfection. The limit has been evaluated using the WLA procedures and determined to be protective of WQS for chlorine toxicity.

The effluent limit for chlorine is less than the quantification level of 0.050 mg/L. However, a pollutant minimization program is not required because the dosing rate of dechlorination chemicals ensures that the water quality-based effluent limit is being met.

Total Phosphorus
Phosphorus is limited based on provisions of OAC 3745-33-06(C).

A seasonal loading limit is also proposed for total phosphorus based on best professional judgement. The limit of 2317 kg per season was the authorized seasonal load based on implemented effluent limits prior to the facility expansion. Due to nutrient enrichment in the waters downstream of Wapakoneta WRF, no additional total phosphorus load was authorized for the facility expansion. The total phosphorus seasonal loading limit applies to a calculated seasonal load in kilograms. The limit applies to the season March 1st through July 31st. The seasonal load must be calculated according to the equation below and reported once in the July DMR (due August 20th):

$$Load = Veff \times Ceff \times CF$$

Where:
Veff = sum of all daily effluent flow rates (MGD) recorded for the period March 1st - July 31st
Ceff = median of all phosphorus concentration (mg/L) results for the period March 1st - July 31st
CF = conversion factor = 3.78548

In September 2023, the Maumee Watershed Nutrient Total Maximum Daily Load (TMDL) Report was approved by USEPA. The TMDL was developed to reduce phosphorus loadings from the Maumee River to restore beneficial uses of drinking water, aquatic life, and recreation in the following assessment units: Lake Erie Shoreline, Open Water, and Islands of the Western Basin. The TMDL assigned an individual wasteload allocation to Wapakoneta WRF of 1,500 kg of total phosphorus for the critical season (March through July). Compliance with this individual wasteload allocation will be regulated through the Maumee Watershed Total Phosphorus NPDES General Permit, under which Wapakoneta WRF has been granted coverage.

***E. coli*, Oil & Grease, and pH**
Limits proposed for oil and grease, pH, and *Escherichia coli* are based on WQS (OAC 3745-1-35 and 37). Primary contact recreation *E. coli* standards apply to the Auglaize River.

Cadmium, Dibromochloromethane, Mercury, and Selenium
The Ohio EPA risk assessment (Table 16) places cadmium, dibromochloromethane, mercury, and selenium in group 5. This placement, as well as the data in Table 8, Table 9, and Table 10, indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For these parameters, the PEQ is greater than 100 percent of the WLA or the PEQ is between 75 and 100 percent of the WLA and certain

conditions exist that increase the risk to the environment. Pollutants that meet this requirement must have permit limits under OAC 3745-33-07(A)(1). New monitoring is proposed for dibromochloromethane, and increased monitoring frequency is proposed for cadmium. A 24-month compliance schedule is proposed for the permittee to attain compliance with the new effluent limits.

Bromodichloromethane, Bromoform, Copper, and 2,4,6-Trichlorophenol
The Ohio EPA risk assessment (Table 16) places bromodichloromethane, bromoform, copper, and 2,4,6-trichlorophenol in group 4. This placement, as well as the data in Table 8, Table 9, and Table 10, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring for Group 4 pollutants (where PEQ exceeds 50 percent of the WLA) is required by OAC 3745-33-07(A)(2). New monitoring is proposed for bromoform and 2,4,6-trichlorophenol due to reasonable potential of carcinogenic additivity, and increased monitoring frequency is proposed for copper.

Chromium, Chloroform, Dissolved Hexavalent Chromium, Free Cyanide, Lead, Nickel, and Zinc
The Ohio EPA risk assessment (Table 16) places these parameters in groups 2 and 3. This placement, as well as the data in Table 9 and Table 10, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. New monitoring for chloroform is proposed due to reasonable potential of carcinogenic additivity (see Attachment 1).

Antimony, Arsenic, Barium, Diethyl Phthalate, Iron, Manganese, Methyl Ethyl Ketone, Molybdenum, and Strontium
The Ohio EPA risk assessment (Table 16) places these parameters in groups 2 and 3. This placement, as well as the data in Table 9 and Table 10, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. No new monitoring is proposed. Data for these parameters will be available for future reasonable potential analyses through the permittee's pretreatment program.

Flow Rate, Specific Conductance, and Temperature
Monitoring for these parameters is proposed to continue to evaluate the performance of the treatment plant.

Nitrate plus Nitrite and Total Kjeldahl Nitrogen
Municipal WWTPs discharge a nutrient load to the river, therefore monthly monitoring for nitrite plus nitrate and total Kjeldahl nitrogen is proposed based on best technical judgment. The purpose of the monitoring is to maintain a nutrient data set for use in future studies.

Dissolved Orthophosphate
Monitoring for dissolved orthophosphate (as P) and total phosphorus is required by ORC 6111.03. This monitoring will further develop nutrient datasets that are used in stream and watershed assessments and studies. Because Ohio EPA monitoring, as well as other in-stream monitoring, for dissolved orthophosphate is taken by grab sample, grab samples are proposed for orthophosphate to maintain consistent data. The grab samples must be filtered within 15 minutes of collection using a 0.45-micron filter. The filtered sample must be analyzed within 48 hours.

Carcinogenic Additivity
Bromodichloromethane, bromoform, dibromochloromethane, chloroform, and 2,4,6-trichlorophenol are carcinogens, for which OAC 3745-33-07(A)(8) requires an evaluation of additivity, the combined toxic effect of carcinogenic pollutants. This evaluation uses an additivity factor equation to determine whether a limit in the permit is necessary to maintain a total carcinogen risk of 1 x 10-5 (1 in 100,000), other limits are protective of carcinogen additivity, or there is no reasonable potential for the total carcinogen risk to be exceeded. In the additivity factor equation, the PEQ average for each additive pollutant is divided by the respective human health

WLA and these values are added together. If the sum is equal to or greater than 1.0, reasonable potential is demonstrated and the permit must contain a limit regulating carcinogenic additivity.

Based on the assessment in Attachment 1, the sum of the fractions is greater than 1.0, therefore reasonable potential is demonstrated and a limit on carcinogenic additivity is proposed. Monitoring for each of the carcinogens is proposed. Compliance with the additivity limit will be assessed using the additivity factor equation, applying the monthly average concentration for each parameter in place of the PEQ average.

Whole Effluent Toxicity Reasonable Potential
Evaluating the acute and chronic toxicity results in Table 9, Table 10, and Attachment 3, under the provisions of 40 CFR Part 132, Appendix F, Procedure 6, gives PEQ values that exceed the WLA values for both acute and chronic toxicity in both water fleas (*Ceriodaphnia dubia*) and fathead minnows (*Pimephales promelas*). Reasonable potential for toxicity is demonstrated. Consistent with Procedure 6 and OAC 3745-33-07(B), a monthly average limit of 1.1 TU_c and a daily maximum limit of 1.0 TU_a are proposed for both species. Toxic impacts of the permittee's effluent may be associated with elevated concentrations of total filterable residue. The permittee has plans to implement a flow augmentation program to reduce these high concentrations, therefore additional toxicity source identification is needed.

OUTFALLS 020, 021, 022, and 023, plus UPSTREAM STATION 802

Total Filterable Residue
The Ohio EPA risk assessment (Table 16) places total filterable residue in group 5. This placement, as well as the data in Table 9 and Table 10, indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. Pollutants that meet this requirement must have permit limits under OAC 3745-33-07(A)(1). Based on justifications provided in a 2021 technical memorandum, effluent limits for total filterable residue are proposed to be applied to several tiers that vary based on the receiving stream flow rate. The tiers are implemented through four "fictitious" outfalls (associated stream flow rates in parentheses):

- Outfall 020 (< 7 cfs) – the proposed limit is protective of WQS at the 7Q10 (2.29 cfs);
- Outfall 021 (7-16 cfs) – the proposed limit is protective of WQS at 7 cfs;
- Outfall 022 (16-25 cfs) – the proposed limit is protective of WQS at 16 cfs;
- Outfall 023 (> 25 cfs) – the proposed limit is protective of WQS at 25 cfs.

Stream Flow Rate
Monitoring is proposed for receiving stream flow rate at upstream monitoring station 802. This monitoring will facilitate identification of the appropriate reporting station for total filterable residue. The permittee will measure river stage and derive the flow rate using an empirically-developed curve relating river stage to flow rate. For the total filterable residue limit tiers to remain applicable, this stage vs. flow curve must be updated and submitted with every NPDES permit renewal application, in accordance with the antidegradation approval associated with the facility expansion.

Additional Monitoring Requirements
Monitoring for *E. coli* at upstream monitoring station 801 and downstream monitoring station 901 is proposed to change to once per two weeks from June through August. The more frequent monitoring over a shorter period will facilitate recreation use attainment assessment in the receiving stream.

Monitoring for total cyanide at station 901 is proposed to be removed due to a lack of reasonable potential to exceed the wasteload allocation at Outfall 001.

Additional monitoring requirements proposed at the final effluent, influent and upstream/downstream stations are included for all facilities in Ohio and vary according to the type and size of the discharge. In addition to

permit compliance, this data is used to assist in the evaluation of effluent quality and treatment plant performance and for designing plant improvements and conducting future stream studies.

Sludge
Limits and monitoring requirements proposed for the disposal of sewage sludge by the following management practices are based on OAC 3745-40: land application and distribution for beneficial use, disposal in an approved landfill, or transfer to another NPDES permit holder.

OTHER REQUIREMENTS

Compliance Schedules

Pretreatment Local Limits Review - An 18-month compliance schedule is proposed for the City to submit a technical justification for either revising its local industrial user limits or retaining its existing local limits. If revisions to local limits are required, the City must also submit a pretreatment program modification request. Details are in Part I.C of the permit.

In addition to the standard requirement to develop and submit a technical local limit justification report, the permittee shall also determine whether the development and implementation of local limits for total phosphorus will help the POTW achieve a monthly average effluent concentration target of 0.5 mg/L. This target is not an effluent limit but permittees should evaluate whether reductions in headworks loading would enable the facility to further reduce total phosphorus loading to the receiving stream and, ultimately, Lake Erie. Local limits for total phosphorus may not be appropriate in all cases and justification can be made for not instituting local limits. Examples include, but are not limited to, (1) if the permittee has maintained a monthly average effluent concentration at or below 0.5 mg/L for the previous 12 months or (2) if industrial loads are not a primary factor contributing to effluent concentrations above 0.5 mg/L. Justification for the permittee's determination must be submitted to Ohio EPA regardless of whether local limits are deemed appropriate or not. Details are in Part I.C of the permit.

New Effluent Limits - A 36-month compliance schedule is proposed for the Wapakoneta WRF to meet the new limits for carcinogenic additivity, cadmium, dibromochloromethane, and selenium. Details are in Part I.C of the permit.

CSO PCCM Schedule - A compliance schedule is proposed for Wapakoneta WRF to implement post-construction compliance monitoring following completion of CSO control projects. Details are in Part I.C of the permit.

CSO Public Notification
The rule for Public Notification Requirements for Combined Sewer Overflows to the Great Lakes Basin, 40 CFR 122.38, was finalized by U.S. EPA on December 17, 2017, published in the Federal Register on January 8, 2018, and became effective on Wednesday, February 7, 2018. This rule protects public health by ensuring timely notification to the public and to public health departments, public drinking water facilities, and other potentially affected public entities. This rule applies to CSO dischargers within Ohio's Lake Erie Basin. Under this rule, CSO dischargers are subject to the following requirements:

- The City submitted its initial Public Notification Plan to Ohio EPA on August 3, 2018. Following comment from Ohio EPA, a revised plan was approved by Ohio EPA on October 4, 2018.
- An Annual Report of data pertaining to CSO activity must be published on or prior to May 1 of every year, beginning in 2019. Ohio EPA and U.S. EPA must be provided with instructions on how to access the Annual Report.

Sanitary Sewer Overflow Reporting

Provisions for reporting SSOs are again proposed in this permit. These provisions include: the reporting of the system-wide number of SSO occurrences on monthly operating reports; telephone notification of Ohio EPA and the local health department, and 5-day follow up written reports for certain high risk SSOs; and preparation of an annual report that is submitted to Ohio EPA and made available to the public. Many of these provisions were already required under the "Noncompliance Notification", "Records Retention", and "Facility Operation and Quality Control" general conditions in Part III of Ohio NPDES permits.

Operator Certification and Operator of Record
Operator certification requirements have been included in Part II of the permit in accordance with rules effective on August 15, 2018 (OAC 3745-7). These rules require the Wapakoneta WRF to have a Class III wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through outfall 001. These rules also require the permittee to designate one or more operator of record to oversee the technical operation of the treatment works and sewerage system.

Sufficiently Sensitive Method
Part II of the permit includes a condition requiring the Wapakoneta WRF to use laboratory analytical methods with a sufficiently sensitive MDL.

Method Detection Limit Reporting
When submitting monitoring results in eDMR, the permittee must report all detected concentration values above the method detection limit (MDL), even if that value is below the quantification level. A detection above the MDL indicates the presence of a pollutant with strong confidence, which must be considered in reasonable potential analyses. Per OAC 3745-33-07(C)(2)(c), for the purpose of assessing compliance, any value reported below the quantification level shall be considered in compliance with an effluent limit.

Outfall Signage
Part II of the permit includes requirements for the permittee to place and maintain a sign at each outfall to the Auglaize River providing information about the discharge. Signage at outfalls is required pursuant to OAC 3745-33-08(A).

Part III
Part III of the permit details standard conditions that include monitoring, reporting requirements, compliance responsibilities, and general requirements.

Stormwater
Parts IV, V, and VI have been included with the draft permit to ensure that any storm water flows from the facility site are properly regulated and managed. As an alternative to complying with Parts IV, V, and VI, the Wapakoneta WRF may seek permit coverage under the general permit for industrial storm water (permit # OHR000006) or submit a "No Exposure Certification." Parts IV, V, and VI will be removed from the final permit if: 1) the Wapakoneta WRF submits a Notice of Intent (NOI) for coverage under the general permit for industrial storm water or submits a No Exposure Certification, 2) Ohio EPA determines that the facility is eligible for coverage under the general permit or meets the requirements for a No Exposure Certification, and 3) the determination by Ohio EPA can be made prior to the issuance of the final permit.

Figure 1. Location of Wapakoneta WRF

Figure 2. Diagram of Wastewater Treatment System

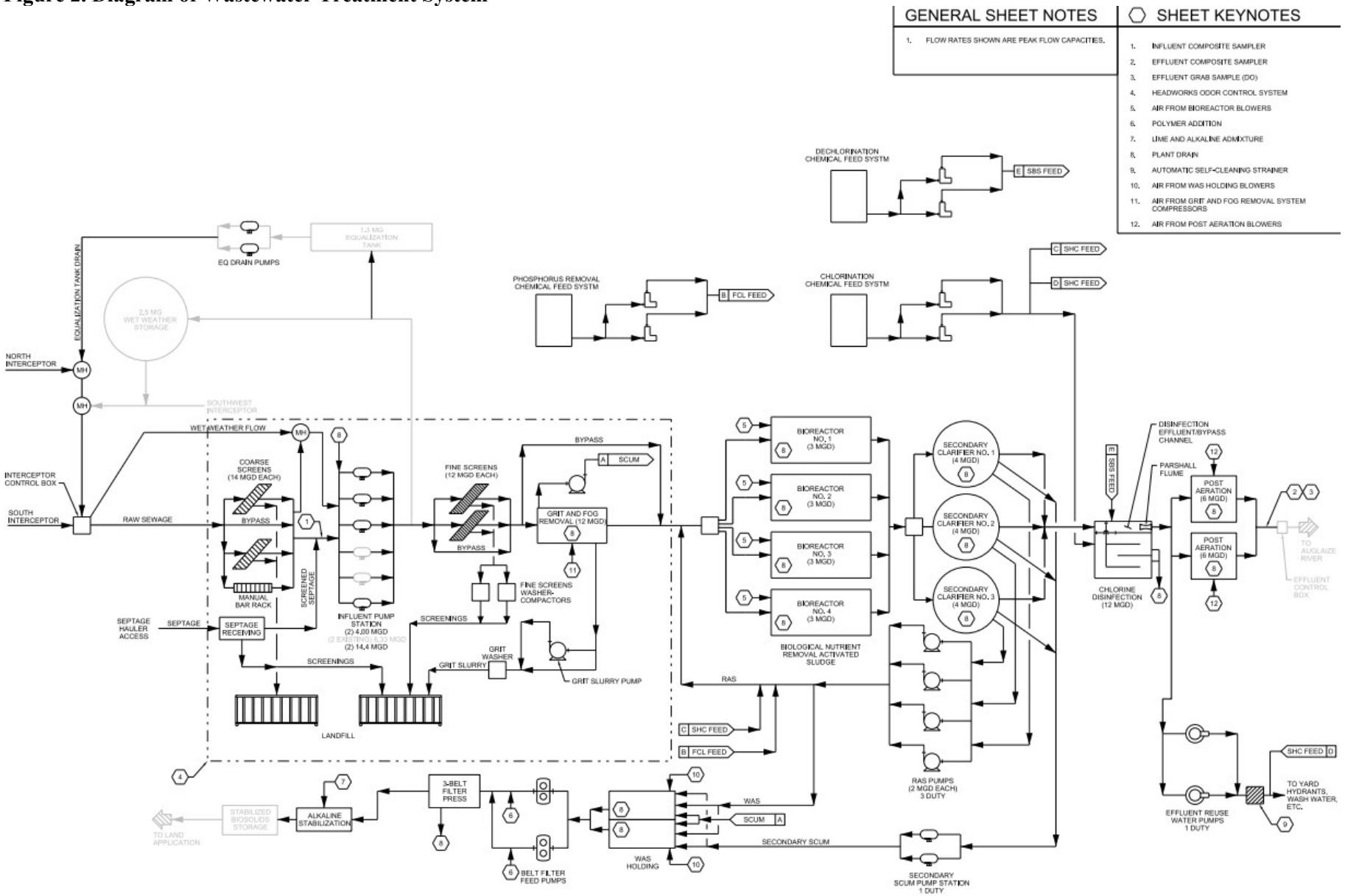

Table 1. Sewage Sludge Removal

Year	Dry Tons Removed
2019	592
2020	509
2021	394
2022	469
2023	1250

Table 2. Effluent Violations for Outfall 001

Outfall	Parameter	2019	2020	2021	2022	2023	Total
001	CBOD5	0	0	0	0	1	**1**
	Chronic Toxicity, *C. dubia*	2	4	4	2	2	**14**
	Chronic Toxicity, *P. promelas*	0	0	1	1	1	**3**
	Dissolved Oxygen	2	0	1	1	1	**5**
	E. coli	3	27	30	1	1	**62**
	Mercury	0	0	0	1	0	**1**
	Ammonia	0	2	0	0	9	**11**
	Phosphorus, Total	2	1	0	0	0	**3**
	Total Filterable Residue	4	17	4	0	0	**25**
	Total Suspended Solids	0	1	1	6	12	**20**
	pH, Maximum	0	0	0	0	4	**4**
	pH, Minimum	0	0	0	0	1	**1**
020	Total Filterable Residue	0	0	0	2	5	**7**
021	Total Filterable Residue	0	0	7	5	5	**17**
022	Total Filterable Residue	0	0	3	1	0	**4**
	Total	**13**	**52**	**51**	**20**	**42**	**178**

Table 3. Average Annual Effluent Flow Rates

	Annual Flow (MGD)		
Year	50th Percentile	95th Percentile	Maximum
2019	2.48	6.70	8.62
2020	2.96	5.78	8.04
2021	2.82	5.96	7.53
2022	2.56	5.63	6.94
2023	2.26	5.00	6.86

MGD = million gallons per day.

Table 4. Sanitary Sewer Overflows Discharges

Year	Occurrences
2019	15
2020	0
2021	0
2022	0
2023	0

Table 5. Bypass Discharges

Year	Number of days	Total Volume (Million Gallons)	Median TSS (mg/L)	Median CBOD5 (mg/L)
2019	16	17.6	28	27
2020	8	1.64	24	24
2021	2	0.67	48	19
2022	1	0.08	24	18
2023	0	--	--	--

Table 6. Combined Sewer Overflow Discharges

	Occurrences						Volume (MG)				
Outfall	2019	2020	2021	2022	2023		2019	2020	2021	2022	2023
003	4	1	1	--	--		11.4	0.7	1.6	--	--
004	8	4	2	2	--		79.2	14.9	19.4	8.6	--

Table 7. Effluent Characterization for Total Phosphorus

	Annual			Seasonal		
Year	Median Concentration (mg/L)	Median Flow Rate (MGD)	Median Loading (kg/day)	Median Concentration (mg/L)	Total Volume (MG)	Seasonal Load (kg)
2019	0.35	2.48	2.49	0.16	545.6	330.5
2020	0.27	2.96	7.17	0.84	529.7	1684.3
2021	0.64	2.82	5.55	0.72	495.2	1349.7
2022	0.52	2.56	3.92	0.47	502.2	893.5
2023	0.41	2.26	4.11	0.32	454.9	551.1

Season = March through July
MGD = million gallons per day

Table 8. Effluent Characterization Using Pretreatment and Ohio EPA Data

	Ohio EPA		Pretreatment				
Parameter	**4/9/2019**	**5/13/2019**	**9/11/2019**	**9/24/2020**	**9/10/2021**	**9/14/2022**	**9/19/2023**
Ammonia (mg/L)	0.11	0.06	--	--	--	--	--
Antimony	0.61	0.73	AA (8)	3.1	2.5	3	AA (2)
Arsenic	2.28	1.44	AA (8)	AA (5.4)	1.5	2	AA (5.4)
Barium	53	37.7	--	--	--	--	--
Bromodichloromethane	AA (0.23)	AA (0.23)	AA (1)	AA (1)	AA (0.3)	41.8	95.7
Bromoform	AA (0.47)	AA (0.47)	AA (1)	AA (1)	AA (0.4)	24.3	100
Cadmium	0.07	AA (0.61)	AA (1)	AA (0.33)	AA (0.1)	AA (0.1)	AA (0.33)
Dibromochloromethane	AA (0.21)	AA (0.21)	AA (1)	AA (1)	AA (0.3)	45	142
Chloroform	1.83	2.69	AA (1)	AA (1)	AA (0.3)	11.8	30.7
Chromium	0.42	0.88	AA (1)	3	3.1	3	3
Copper	4.12	3.07	6	AA (4.6)	7.7	8	15
Diethyl Phthalate	AA (0.70)	0.77	AA (5)	AA (1)	AA (1.04)	AA (0.82)	AA (0.25)
Iron	127	78.1	--	--	--	--	--
Lead	AA (0.25)	AA (0.25)	AA (5)	AA (3.3)	AA (0.2)	AA (0.2)	AA (3.3)
Manganese	51.1	55.8	--	--	--	--	--
Methyl Ethyl Ketone	0.94	AA (0.51)	--	--	--	--	--
2-Methylnapthalene	AA (0.75)	0.9	--	--	--	--	--
Molybdenum	NT	NT	NT	39.6	65	57	68
Nickel	7.67	9.23	18	30.2	30	22	24
Nitrite plus Nitrate (mg/L)	3.29	4.53	--	--	--	--	--
Selenium	1.8	0.98	AA (8)	6.5	7	7	14
Specific Conductance	2350	1690	--	--	--	--	--
Strontium	14700	9340	--	--	--	--	--
Total Filterable Residue	952	1410	--	--	--	--	--
2,4,6-Trichlorophenol	2.04	2.01	AA (5)	AA (1)	AA (2.61)	AA (2.8)	AA (0.25)
Zinc	23.2	8.89	25	14.1	28	20	24

Units in µg/L unless otherwise noted
AA = not-detected (analytical method detection limit)

Table 9. Effluent Characterization Using Self-Monitoring Data

Parameter	Unit	Current Limits		# Obs	Percentiles		Data Range
		30 Day	Daily		50th	95th	
Outfall 001							
Water Temperature	°C	- - - Monitor - - -		1764	18	25	4 - 28
Specific Conductance at 25 Degrees C	Umho/cm	- - - Monitor - - -		1672	2150	3160	0 - 4570
Dissolved Oxygen	mg/L	--	6.0[m]	1764	8	6.9**	4.5 - 81
Total Suspended Solids (2019-23)	kg/day	182	273[w]	1300	55.1	226	0 - 2480
Total Suspended Solids (2019)	kg/day	182.0	273.0[w]	79	35.1	178	6.76 - 323
Total Suspended Solids (2019-23)	mg/L	12	18[w]	1300	5	18	0 - 113
Total Suspended Solids (2019)	mg/L	12.0	18.0[w]	79	3	6.1	1 - 16
Oil and Grease (2019-23)	mg/L	--	10	112	< 5	1.13	0 - 6.2
Oil and Grease (2019)	mg/L	--	10.0	6	--	--	< 5
Ammonia (Summer)	kg/day	15	23[w]	357	1.34	11.5	.115 - 45.1
Ammonia (Summer)	mg/L	1.0	1.5[w]	357	.141	1.06	.013 - 5.16
Ammonia (Winter, 2019-23)	kg/day	76	114[w]	302	2.11	42.5	0 - 358
Ammonia (Winter, 2019)	kg/day	76.0	114.0[w]	36	1.9	16.3	.0985 - 25.5
Ammonia (Winter)	mg/L	5.0	7.5[w]	338	.158	4.03	0 - 19.1
Nitrogen Kjeldahl	mg/L	- - - Monitor - - -		58	2.4	5.14	0 - 13.9
Nitrite Plus Nitrate	mg/L	- - - Monitor - - -		58	8.77	25.6	0 - 31.3
Phosphorus (2019-23)	kg/day	0.080	0.35	236	5.35	13.4	.158 - 22.4
Phosphorus (2019)	kg/day	0.0053	0.023	13	2.25	7.28	.164 - 11.4
Phosphorus, Total	mg/L	0.080	0.35	249	.48	1.08	.01 - 1.74
Orthophosphate	mg/L	- - - Monitor - - -		58	.285	.713	0 - .82
Cyanide, Free	kg/day	0.080	0.35	3	--	--	< .0411
Cyanide, Free	mg/L	0.0053	0.023	3	--	--	< .005
Selenium, TR	µg/L	- - - Monitor - - -		54	5	10.4	0 - 15
Nickel, TR	µg/L	- - - Monitor - - -		18	22.1	31.6	0 - 35
Zinc, TR	µg/L	- - - Monitor - - -		18	23.5	51.7	0 - 101
Cadmium, TR	µg/L	- - - Monitor - - -		18	< 3	3	0 - 20
Lead, TR	µg/L	- - - Monitor - - -		18	--	--	< 10
Chromium, TR	µg/L	- - - Monitor - - -		18	--	--	< 7
Copper, TR	µg/L	- - - Monitor - - -		18	7.25	23.8	0 - 45
Chromium, Dissolved Hexavalent	µg/L	- - - Monitor - - -		19	--	--	< 10

Parameter	Unit	Current Limits		# Obs	Percentiles		Data Range
		30 Day	Daily		50th	95th	
E. coli	#/100 mL	126	284[w]	361	133	2420	0 - 2920
Rainfall in Inches	Inches	- - - Monitor - - -		1764	0	.75	0 - 3.7
Flow Rate	MGD	- - - Monitor - - -		1764	2.67	5.82	1.2 - 8.62
Chlorine, Total Residual	mg/L	- - - Monitor - - -		366	.01	.05	0 - .24
Mercury	kg/day	0.00002	0.026	56	.00000585	.0000419	0 - .000154
Mercury (2019-23)	ng/L	1.3	1700	56	.585	2.1	0 - 16.4
Mercury (2019)	ng/L			3	.654	.789	0 - .804
Cyanide, Free	kg/day	0.080	0.35	53	< .000017	.0000521	0 - .0363
Cyanide, Free	µg/L	5.3	23	53	< 3	.00432	0 - 3.8
Acute Toxicity, *C. dubia*	TUa	- - - Monitor - - -		18	.2	1.12	0 - 1.2
Chronic Toxicity, *C. dubia*	TUc	1.0	--	19	2	3.5	0 - 3.5
Acute Toxicity, *P. promelas*	TUa	- - - Monitor - - -		18	< .2	.375	0 - .8
Chronic Toxicity, *P. promelas*	TUc	1.0	--	18	< 1	1.32	0 - 1.4
pH, Maximum	S.U.	--	9.0	1764	8.1	8.6	.4 - 9.4
pH, Minimum	S.U.	--	6.5[m]	1230	8	7.5*	6.4 - 9.1
Total Filterable Residue (2019)	kg/day	23100	--	78	21100	29800	7760 - 44900
Total Filterable Residue (2019)	mg/L	1523	--	78	1890	2610	680 - 2720
CBOD5 (2019)	mg/L	10.0	15.0[w]	36	2	5.5	0 - 8
CBOD5 (2019)	kg/day	151.0	227.0[w]	36	34.1	160	0 - 178
CBOD 5 (2019-23)	mg/L	10	15[w]	660	2	8.05	0 - 27
CBOD 5 (2019-23)	kg/day	151	227[w]	660	24.7	99.7	0 - 411
Total Filterable Residue							
Outfall 020 (< 7 cfs)	mg/L	1592	--	13	2000	2740	1130 - 2910
Outfall 021 (7-16 cfs)	mg/L	1780	--	26	2420	2810	1680 - 2860
Outfall 022 (16-25 cfs)	mg/L	2141	--	17	1930	2420	1140 - 2480
Outfall 023 (> 25 cfs)	mg/L	2500	--	18	1310	2230	1100 - 2350

* = For minimum pH, 5th percentile shown in place of 50th percentile.
** = For dissolved oxygen, 5th percentile shown in place of 95th percentile.
[w] = weekly average.
[m] = minimum limit.

Table 10. Projected Effluent Quality for Outfall 001

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Outfall 001					
Ammonia (Summer)	mg/L	241	241	0.29	0.60
Ammonia (Winter)	mg/L	181	181	0.99	2.13
Antimony	µg/L	6	5	4.75	6.51
Arsenic	µg/L	4	4	4.33	5.93
Barium	µg/L	2	2	147	201
Bromodichloromethane	µg/L	7	2	139	191
Bromoform	µg/L	7	2	146	200
Cadmium	µg/L	26	2	19.0	26.0
Chlorine, Total Residual	mg/L	366	272	0.023	0.053
Dibromochloromethane	µg/L	7	2	207	284
Chloroform	µg/L	7	4	44.8	61.4
Chromium	µg/L	8	6	4.30	5.89
Chromium, Dissolved Hexavalent	µg/L	20	0	--	--
Copper	µg/L	26	16	23.8	40.6
Cyanide, Free	µg/L	54	5	2.53	4.01
Diethyl phthalate	µg/L	4	1	1.56	2.13
Iron	µg/L	2	2	352	483
Lead	µg/L	26	0	--	--
Manganese	µg/L	2	2	155	212
Mercury	ng/L	59	34	1.3	2.0
Methyl ethyl ketone	µg/L	2	1	2.61	3.57
Molybdenum	µg/L	4	4	129	177
Nickel	µg/L	26	25	34.6	51.3
Nitrate + Nitrite	mg/L	61	59	26.6	42.2
Selenium	µg/L	62	37	12.4	17.0
Strontium	µg/L	2	2	40780	55860
2,4,6-Trichlorophenol	µg/L	4	2	3.87	5.30
Zinc	µg/L	26	24	45.0	70.2
Total Filterable Residue					
Outfall 020 (< 7 cfs)	mg/L	15	15	2800	3659
Outfall 021 (7-16 cfs)	mg/L	26	26	2731	3128
Outfall 022 (16-25 cfs)	mg/L	76	76	2605	3274
Outfall 023 (> 25 cfs)	mg/L	18	18	2031	2643

MDL = analytical method detection limit
PEQ = projected effluent quality
* Per OAC 3745-2-04(E)(3), ammonia PEQ is based on data collected during the following months:
Summer – June through September
Winter – December through February

Table 11. Summary of Acute and Chronic Toxicity Results

	Ceriodaphnia Dubia		*Pimephales promelas*	
Date	**TU_a**	**TU_c**	**TU_a**	**TU_c**
6/4/2019	AA (0.2)	AA (1)	0.8	1
8/16/2019	AA (0.2)	1.5	AA (0.2)	AA (1)
12/17/2019	1.1	2	AA (0.2)	AA (1)
2/17/2020	0.4	1.1	AA (0.2)	AA (1)
3/13/2020	AA (0.2)	1.4	AA (0.2)	AA (1)
6/9/2020	AA (0.2)	2.2	AA (0.2)	AA (1)
8/25/2020	0.9	2.2	AA (0.2)	AA (1)
12/15/2020	1.2	3.5	AA (0.2)	AA (1)
3/16/2021	0.6	3.5	AA (0.2)	1.4
6/3/2021	1	2.3	0.2	AA (1)
8/2/2021	1	2.4	0.3	AA (1)
12/8/2021	0.4	2	AA (0.2)	AA (1)
3/22/2022	AA (0.2)	2	AA (0.2)	1
6/14/2022	AA (0.2)	2	AA (0.2)	AA (1)
8/22/2022	--	1.4	--	--
8/23/2022	0.6	AA (1)	AA (0.2)	1.1
12/6/2022	AA (0.2)	AA (1)	AA (0.2)	AA (1)
3/14/2023	AA (0.2)	AA (1)	AA (0.2)	AA (1)
6/6/2023	AA (0.2)	1	AA (0.2)	AA (1)
8/29/2023	1.1	1.1	AA (0.2)	1.3
12/12/2023	AA (0.2)	1.6	AA (0.2)	AA (1)

AA = non-detection; analytical method detection limit of 0.2 TU_a, 1.0 TU_c
TU_a = acute toxicity unit
TU_c = chronic toxicity unit

Table 12. Use Attainment Table

Location	RM	Use	Status	Cause	Source
Auglaize River at Dixie Highway	87.4	WWH	FULL		
Auglaize River at Hamilton Street, downstream of CSOs	85.3	WWH	PARTIAL	Nutrients, contaminants	CSOs, Impoundment
Auglaize River adjacent to Green Lawn Cemetery, downstream of WRF	84.1	WWH	FULL		

Data gathered during 1991 watershed survey, published in *Biological and Water Quality Study of the Auglaize River and Selected Tributaries. Auglaize, Allen, Putnam and Paulding Counties, Ohio*
RM = River mile
WWH = warmwater habitat

Table 13. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Average				Maximum	
		Wildlife	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia (Summer)	mg/L	--	--	--	0.5	--	--
Ammonia (Winter)	mg/L	--	--	--	0.8	--	--
Antimony	µg/L	--	780	--	190	900	1800
Arsenic	µg/L	--	580	100	150	340	680
Barium	µg/L	--	160000	--	1900	8200	16000
Bromodichloromethane	µg/L	--	180[c]	--	340	3100	6200
Bromoform	µg/L	--	890[c]	--	230	1100	2200
Cadmium	µg/L	--	730	50	7.3	22	43
Chlorine, Total Residual	mg/L	--	--	--	0.011	0.019	0.038
Dibromochloromethane	µg/L	--	150	--	320	2900	5800
Chloroform	µg/L	--	1700[c]	--	140	1300	2600
Chromium	µg/L	--	14000	100	270	5600	11000
Chromium, Dissolved Hexavalent	µg/L	--	14000	--	11	16	31
Copper	µg/L	--	64000	500	30	52	100
Cyanide, Free	µg/L	--	48000	--	5.2	22	44
Diethyl phthalate	µg/L	--	--	--	220	980	2000
Iron	µg/L	--	--	5000	--	--	--
Lead	µg/L	--	--	100	37	710	1400
Manganese	µg/L	--	61000	--	--	--	--
Mercury [B]	ng/L	1.3	3.1	10000	910	1700	3400
Methyl ethyl ketone	µg/L	--	--	--	22000	200000	400000
Molybdenum	µg/L	--	10000	--	20000	190000	370000
Nickel	µg/L	--	43000	200	170	1500	3000
Nitrate + Nitrite	mg/L	--	--	100	--	--	--
Selenium	µg/L	--	3100	50	5	62	120
Strontium	µg/L	--	1400000	--	110000	280000	560000
Total Filterable Residue	mg/L	--	--	--	1500	--	--
2,4,6-Trichlorophenol	µg/L	--	190[c]	--	4.9	39	79
Zinc	µg/L	--	35000	25000	390	390	780

[B] Bioaccumulative Chemical of Concern
[C] = Carcinogen

Table 14. Instream Conditions and Discharger Flow

Parameter	Units	Season	Value	Basis
Stream Flows[a]				
1Q10	cfs	annual	1.49	Streamstats[a]
7Q10	cfs	annual	2.29	Streamstats[a]
30Q10	cfs	summer	3.51	Streamstats[a]
		winter	13.55	Streamstats[a]
90Q10	cfs	annual	5.32	Streamstats[a]
Harmonic Mean Flow	cfs	annual	11.9	USGS gage 04186500, adjusted for DA
Mixing Assumption	%	average	25	
		maximum	100	
*Hardness, OMZ**	mg/L	annual	500	901; 2019-23; n= 59; median
*Hardness, IMZ**	mg/L	annual	500	901; 2019-23; n= 59; median
pH	S.U.	summer	8.3	901; 2019-23; n=20; 75th percentile
		winter	8.6	901; 2019-23; n=14; 75th percentile
Temperature	ºC	summer	24.2	901; 2019-23; n=20; 75th percentile
		winter	14	901; 2019-23; n=14; 75th percentile
Wapakoneta WPC flow	cfs (MGD)	annual	9.283 (6.0)	NPDES Application Form 2A
Background Water Quality				
Ammonia (Summer)	mg/L	summer	0.14	Station 801; 2019-23; n=20, median
Ammonia (Winter)	mg/L	winter	0.11	Station 801; 2019-23; n=14, median
Antimony	µg/L	annual	0	No representative data available.
Arsenic	µg/L	annual	2.54	Ambient Station P03P17; 2019; n=6; mean
Barium	µg/L	annual	79.8	Ambient Station P03P17; 2019; n=6; mean
Bromodichloromethane	µg/L	annual	0	No representative data available.
Bromoform	µg/L	annual	0	No representative data available.
Cadmium	µg/L	annual	0.12	Ambient Station P03P17; 2019; n=6; mean
Chlorine, Total Residual	mg/L	annual	0	No representative data available.
Dibromochloromethane	µg/L	annual	0	No representative data available.
Chloroform	µg/L	annual	0	No representative data available.
Chromium	µg/L	annual	2.03	Ambient Station P03P17; 2019; n=6; mean
Chromium, Dissolved Hexavalent	µg/L	annual	0	No representative data available.
Copper	µg/L	annual	3.65	Ambient Station P03P17; 2019; n=6; mean
Cyanide, Free	µg/L	annual	0	No representative data available.
Diethyl phthalate	µg/L	annual	0	No representative data available.
Iron	µg/L	annual	3644	Ambient Station P03P17; 2019; n=6; mean
Lead	µg/L	annual	2.13	Ambient Station P03P17; 2019; n=6; mean
Manganese	µg/L	annual	79.3	Ambient Station P03P17; 2019; n=6; mean
Mercury	ng/L	annual	0	No representative data available.
Methyl ethyl ketone	µg/L	annual	0	No representative data available.
Molybdenum	µg/L	annual	0	No representative data available.
Nickel	µg/L	annual	5.44	Ambient Station P03P17; 2019; n=6; mean
Nitrate + Nitrite	mg/L	annual	2.4	Station 801; 2019-23; n=59, median
Selenium	µg/L	annual	0.38	Ambient Station P03P17; 2019; n=6; mean

Parameter	Units	Season	Value	Basis
Strontium	µg/L	annual	2654	Ambient Station P03P17; 2019; n=6; mean
Total Filterable Residue	mg/L	annual	435	Station 801; 2019-23; n=56, median
2,4,6-Trichlorophenol	µg/L	annual	0	No representative data available.
Zinc	µg/L	annual	17.3	Ambient Station P03P17; 2019; n=6; mean

*the measured hardness is 500 mg/L but the highest allowable value for wasteload allocation calculations is 400 mg/L
USGS = United States Geological Survey
DA = drainage area
MDL = analytical method detection limit
n = number of samples

[a]In a 2021 technical memo, the permittee used a 7Q10 value in its justification for tiered limits for total filterable residue. The 7Q10 is based on a value generated in Streamstats (using a drainage area of 110 square miles), then reduced by the standard error of the calculation. This approach was applied to the 1Q10, 30Q10-summer, and 90Q10.

Streamstats does not generate a value for 30Q10-winter. To calculate a 30Q10-winter value, the 30Q10-summer value (as calculated above) was increased by the ratio of summer:winter 30Q10 flows used in previous reasonable potential analyses (which used historical data from USGS gage 04186500). This ratio is: 1.94:7.49 = 3.86.

Table 15. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Average				Maximum	
		Wildlife	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia (Summer)	mg/L	--	--	--	0.64	--	--
Ammonia (Winter)	mg/L	--	--	--	1.81	--	--
Antimony	µg/L	--	1030	--	202	1044	1800
Arsenic	µg/L	--	765	131	159	394	680
Barium	µg/L	--	211249	--	2012	9503	16000
Bromodichloromethane	µg/L	--	238	--	361	3598	6200
Bromoform	µg/L	--	1175	--	244	1277	2200
Cadmium	µg/L	--	964	66	7.7	26	43
Chlorine, Total Residual	mg/L	--	--	--	0.012	0.022	0.038
Dibromochloromethane	µg/L	--	198	--	340	3365	5800
Chloroform	µg/L	--	2245	--	149	1509	2600
Chromium	µg/L	--	18486	131	287	6498	11000
Chromium, Dissolved Hexavalent	µg/L	--	18487	--	12	19	31
Copper - TR	µg/L	--	84509	659	32	60	100
Cyanide, Free	µg/L	--	63382	--	5.5	26	44
Diethyl phthalate	µg/L	--	--	--	234	1137	2000
Iron	µg/L	--	--	5435	--	--	--
Lead	µg/L	--	--	131	39	824	1400
Manganese	µg/L	--	80523	--	--	--	--
Mercury	ng/L	1.3	3.1	10000	910	1700	3400
Methyl ethyl ketone	µg/L	--	--	--	23357	232100	400000
Molybdenum	µg/L	--	13205	--	21233	220495	370000
Nickel	µg/L	--	56778	262	180	1740	3000
Nitrate+ Nitrite	mg/L	--	--	131	--	--	--
Selenium	µg/L	--	4093	66	5.3	72	120
Strontium	µg/L	--	1847800	--	116620	324514	560000
Total Filterable Residue	mg/L	--	--	--	1566	--	--
2,4,6-Trichlorophenol	µg/L	--	251	--	5.2	45	79
Zinc	µg/L	--	46211	33006	413	450	780

[B] Bioaccumulative Chemical of Concern (BCC); no mixing zone allowed after 11/15/2010, WQS must be met at end-of-pipe, unless requirements for an exception are met as listed in OAC 3745-2-05(A)(2)(e)(ii)

Table 16. Parameter Assessment

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

No parameters fit this category

Group 2: PEQ < 25 percent of WQS or all data below minimum detection limit.
WLA not required. No limit recommended; monitoring optional.

Antimony	Arsenic	Barium
Chromium	Chromium, Dissolved Hexavalent	Diethyl phthalate
Iron	Lead	Manganese
Methyl ethyl ketone	Molybdenum	Nickel
Zinc		

Group 3: PEQmax < 50 percent of maximum PEL and PEQavg < 50 percent of average PEL.
No limit recommended; monitoring optional.

Ammonia (Summer)	Chloroform	Cyanide, Free
Nitrate + Nitrite	Strontium	

Group 4: PEQmax >= 50 percent, but < 100 percent of the maximum PEL or
PEQavg >= 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Ammonia (Winter)	Bromodichloromethane	Bromoform
Copper	2,4,6-Trichlorophenol	

Group 5: Maximum PEQ >= 100 percent of the maximum PEL or average PEQ >= 100 percent of the average PEL, or either the average or maximum PEQ is between 75 and 100 percent of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

		Recommended Effluent Limits	
Parameter	***Units***	***Average***	***Maximum***
Cadmium	µg/L	7.7	26
Chlorine, Total Residual	mg/L	0.012	0.022
Dibromochloromethane	µg/L	198	3365
Mercury	ng/L	1.3	1700
Selenium	µg/L	5.3	72
Total Filterable Residue	mg/L	1566	--

PEL = preliminary effluent limit
PEQ = projected effluent quality
WQS = water quality standard

Table 17. Final Effluent Limits for Outfall 001

Parameter	Units	Concentration		Loading (kg/day)[a]		Basis[b]
		Daily Maximum	30 Day Average	Daily Maximum	30 Day Average	
Water Temperature	°C	- - - - - - - - - - Monitor - - - - - - - - - - -				M[c]
Precipitation	Inches	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Dissolved Oxygen	mg/L	6.0[m]	--	--	--	BADCT
Oil & Grease	mg/L	10	--	--	--	WQS
Ammonia	mg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Total Kjeldahl Nitrogen	mg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				BPJ
Nitrate plus Nitrite	mg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				BPJ
Phosphorus	mg/L	1.5 [d]	1.0	34 [d]	23	PTS
Orthophosphate	mg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				PMR
Selenium	µg/L	72	5.3	1.6	0.12	WLA
Nickel	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Zinc	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Cadmium	µg/L	26	7.7	0.59	0.17	WLA
Lead	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Chromium	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Copper	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				RP
Dissolved Hexavalent Chromium	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
E. coli	#/100 mL	284 [d]	126	--	--	WQS
Bromodichloromethane	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				RP
Bromoform	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				RP
Dibromochloromethane	µg/L	3365	150	76	3.4	WLA
Chloroform	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				CA
2,4,6-Trichlorophenol	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				RP
Flow Rate	MGD	- - - - - - - - - - Monitor - - - - - - - - - - -				M[c]
Chlorine	mg/L	0.019	--	--	--	PD
Mercury	ng/L	1700	1.3	0.039	0.00003	WLA
Additivity, Carcinogenic	--	1.0	--	--	--	CA
Free Cyanide	µg/L	- - - - - - - - - - Monitor - - - - - - - - - - -				M
Phosphorus (Load)	kg	--	2317	--	--	BPJ/AD
Acute Toxicity, *Ceriodaphnia dubia*	mg/L	1.0	--	--	--	WET
Chronic Toxicity, *Ceriodaphnia dubia*	mg/L	--	1.0	--	--	WET
Acute Toxicity, *Pimephales promelas*	mg/L	1.0	--	--	--	WET
Chronic Toxicity, *Pimephales promelas*	mg/L	--	1.0	--	--	WET
pH, maximum	SU	9.0	--	--	--	WQS
pH, minimum	SU	6.5[m]	--	--	--	WQS

[a] Effluent loadings based on average design discharge flow of 6.0 MGD.

[b] Definitions:

AD = antidegradation (3745-1-05)
BADCT = Best Available Demonstrated Control Technology, 40 CFR Part 122.29, and OAC 3745-1-05
BPJ = Best Professional Judgment

CA = Carcinogenic Additivity (OAC 3745-33-07(A)(8))
M = Division of Surface Water NPDES Permit Guidance 1: Monitoring frequency requirements for Sanitary Discharges
PD = Plant Design (OAC 3745-33-05(E))
PMR = Phosphorus monitoring requirements (ORC 6111.03)
PTS = Phosphorus Treatment Standards (OAC 3745-33-06 (C))
RP = Reasonable Potential Analysis requires monitoring in permits (OAC 3745-33-07(A))
TMDL = Total Maximum Daily Load
WET = Requiring water quality-based effluent limits and monitoring requirements for whole effluent toxicity in NPDES permits [40 CFR Part 132, Appendix F, Procedure 6 and OAC 3745-33-07(B)]
WLA = Wasteload Allocation procedures (OAC 3745-2)
WQS = Ohio Water Quality Standards (OAC 3745-1)

[c] Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.

[d] 7 day average limit.

[m] minimum limit

Table 18. Final Effluent Limits for Internal Monitoring Station 603

Parameter	Units	Concentration		Loading (kg/day)[a]		Basis[b]
		Daily Maximum	30 Day Average	Daily Maximum	30 Day Average	
Dissolved Oxygen	mg/L	6.0[m]	--	--	--	BADCT
Total Suspended Solids	mg/L	18[d]	12	409[d]	273	BADCT
Ammonia (summer)	mg/L	1.5 [d]	1.0	34 [d]	23	BADCT
Ammonia (winter)	mg/L	4.5 [d]	30	103 [d]	68	BADCT
Flow Rate	MGD	- - - - - - - - - - - Monitor - - - - - - - - - - -				M[c]
CBOD5	mg/L	15 [d]	10	341 [d]	228	BADCT

[a] Effluent loadings based on average design discharge flow of 6.0 MGD.

[b] Definitions:
BADCT = Best Available Demonstrated Control Technology, 40 CFR Part 122.29, and OAC 3745-1-05
M = Division of Surface Water NPDES Permit Guidance 1: Monitoring frequency requirements for Sanitary Discharges

[c] Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.

Table 19. Final Effluent Limits for Total Filterable Residue

Parameter	Units	Concentration		Loading (kg/day)[a]		Basis[b]
		Daily Maximum	30 Day Average	Daily Maximum	30 Day Average	
Outfall 020 (< 7 cfs)	mg/L	--	1561	--	35456	WLA
Outfall 021 (7-16 cfs)	mg/L	--	1687	--	38312	BPJ
Outfall 022 (16-25 cfs)	mg/L	--	1927	--	43769	BPJ
Outfall 023 (> 25 cfs)	mg/L	--	2167	--	49226	BPJ

[a] Effluent loadings based on average design discharge flow of 6.0 MGD.

[b] Definitions:
BPJ = best professional judgement
WLA = Wasteload Allocation procedures (OAC 3745-2)

Attachment 1. Additivity Equation for Carcinogens

Parameter	No.	Units	PEQ_{avg}	WLA_{HH}	PQL
Bromodichloromethane	1	µg/L	140	238	0.085
Bromoform	2	µg/L	146	1175	0.1
Dibromochloromethane	3	µg/L	207	198	0.15
Chloroform	4	µg/L	44.8	2245	0.05
2,4,6-Trichlorophenol	5	µg/L	3.87	251	3.2

PEQ = projected effluent quality
WLA = wasteload allocation
PQL = practical quantification limit

The carcinogen additivity equation below is used to determine reasonable potential for the combined toxic effect of carcinogenic pollutants. Bromodichloromethane, bromoform, dibromochloromethane, chloroform, and 2,4,6-trichlorophenol are included in the equation. Reasonable potential for additive effects is determined by dividing the PEQ average for each additive pollutant by the human health wasteload allocation for that pollutant and adding these values. The following additivity equation is used:

$$\frac{PEQ_{avg}1}{WLA_{HH}1} + \frac{PEQ_{avg}2}{WLA_{HH}2} + \frac{PEQ_{avg}3}{WLA_{HH}3} + \frac{PEQ_{avg}4}{WLA_{HH}4} + \frac{PEQ_{avg}5}{WLA_{HH}5} \leq 1.0$$

$$\frac{140}{238} + \frac{146}{1175} + \frac{207}{198} + \frac{44.8}{2245} + \frac{3.87}{251} = 1.79$$

If the sum is equal to or greater than 1.0, the permit must have a limit regulating carcinogenic additivity. Reasonable potential is demonstrated, therefore an additivity limit of 1.0 is proposed. Compliance with the limit will be assessed by substituting the monthly average concentration for each additive pollutant in place of the PEQ average.

Attachment 2. Whole Effluent Toxicity Reasonable Potential Analysis

	Water Flea (*Ceriodaphnia dubia*)		Fathead Minnow (*Pimephales promelas*)	
	Acute	**Chronic**	**Acute**	**Chronic**
WLA (TU)	0.4	1.06	0.4	1.06
Total # of Tests	21	21	21	21
Maximum Value (TU)	1.2	3.5	0.8	1.4
Coefficient of Variation[1] (standard deviation/mean) [Where # tests > 10]	0.8	0.4	0.6	0.2
Multiplying Factors[2]	1.5	1.2	1.4	1.1
PEQ (Maximum Value x Multiplying Factor)	1.8	4.2	1.12	1.54
Reasonable Potential Demonstrated? (Yes/No) (Yes if PEQ > WLA)	Yes	Yes	Yes	Yes

[1] 40 CFR Part 132, Appendix F, Paragraph D(3)
[2] 40 CFR Part 132, Appendix F, Table F6-1

Attachment 3. Acronyms

ABS	Anti-backsliding
BPJ	Best professional judgment
CFR	Code of Federal Regulations
CMOM	Capacity Management, Operation, and Maintenance
CONSWLA	Conservative substance wasteload allocation
CSO	Combined sewer overflow
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DMT	Dissolved metal translator
IMZM	Inside mixing zone maximum
LTCP	Long-term Control Plan
MDL	Analytical method detection limit
MGD	Million gallons per day
NPDES	National Pollutant Discharge Elimination System
OAC	Ohio Administrative Code
Ohio EPA	Ohio Environmental Protection Agency
ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
PEL	Preliminary effluent limit
PEQ	Projected effluent quality
PMP	Pollution Minimization Program
PPE	Plant performance evaluation
SSO	Sanitary sewer overflow
TMDL	Total Daily Maximum Load
TRE	Toxicity reduction evaluation
TU	Toxicity unit
U.S. EPA	United States Environmental Protection Agency
WET	Whole effluent toxicity
WLA	Wasteload allocation
WPCF	Water Pollution Control Facility
WQBEL	Water-quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater Treatment Plant