National Pollutant Discharge Elimination System (NPDES) Permit Program

F A C T S H E E T

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for the **Fremont Wastewater Treatment Plant**

Public Notice No.: 12-03-013
Public Notice Date: March 6, 2012
Comment Period Ends: April 6, 2012

OEPA Permit No.: **2PD00007*RD**
Application No.: **OH0025291**

Name and Address of Applicant:

Mayor and Council
City of Fremont
323 South Front Street
Fremont, Ohio 43420

Name and Address of Facility Where Discharge Occurs:

Fremont Water Pollution Center
1019 Sand Road
Fremont, Ohio 43420
Sandusky County

Receiving Water: **Sandusky River**

Subsequent Stream Network: **Sandusky Bay**

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, 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, 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 and Ohio Water Pollution Control Law (ORC 6111). Decisions to award variances to Water Quality Standards or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Effluent limits based on available treatment technologies are required by Section 301(b) of the Clean Water Act. Many of these have already been established by 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 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 wasteload allocation for a pollutant to a measure of the effluent quality. The measure of effluent quality is called PEQ - Projected Effluent Quality. 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 Ohio EPA risk assessment (Table 8) places copper, cyanide, mercury and total dissolved solids (total dissolved residue) in group 4. This placement as well as the data in Tables 2, 3 and 4 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 is proposed for these parameters.

Limits for nitrogen ammonia, CBOD, chlorine, dissolved oxygen oil & grease, pH, phosphorus and total suspended solids are proposed to continue from the current permit.

Effluent limits are being proposed for *Escherichia coli*. Water quality standards for *E. coli b*ecame effective in March 2010. Since the facility does not anticipate problems meeting the proposed monthly and weekly geometric mean concentrations of 126 and 284 per 100 ml respectively, these limits have been recommended in the permit final effluent tables.

Current permit limits for strontium are being removed with monitoring maintained because effluent data shows that they no longer have the reasonable potential to contribute to exceedances of water quality standards.

Current monitoring requirements for bis(2-ethylhexyl) phthalate are being removed from the permit because only one data point was above detection.

This permit renewal is proposed for a term of approximately **5 years**, expiring on **January 31, 2017**. This schedule will allow the Fremont wastewater treatment plant permit to be on a similar schedule with the other facilities within the same watershed basin.

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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 addressed 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 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 and Compliance Section
P.O. Box 1049
Columbus, Ohio 43216-1049

The OEPA 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 draft permit, contact MaryBeth Cohen by phone at (419) 352-3014 or by email at mary.cohen@epa.state.oh.us.

Location of Discharge/Receiving Water Use Classification

The Fremont Wastewater Treatment Plant discharges to the Sandusky River at River Mile (RM) 13.85. The approximate location of the facility is shown in Figure 1.

This segment of the Sandusky River is described by Ohio EPA River Code: 05-001, U.S. EPA River Reach #: 04100011-006, County: Sandusky, Ecoregion: Huron/Erie Lake Plains. The Sandusky River is designated for the following uses under Ohio's Water Quality Standards (OAC 3745-1-12): Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Class A Primary Contact Recreation (PCR).

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 water quality standards 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 Clean Water Act. Ohio WQS also include aquatic life use designations for waterbodies which can not meet the Clean Water Act goals because of human-caused conditions that can not 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) and wading only (Secondary Contact - 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 and industrial water supply.

Facility Description

The Fremont WWTP was built in 1949 with the latest major modification in 1988. The WWTP is an advanced treatment facility with an average design flow of 7.6 million gallons per day (MGD). Wet stream processes include holding ponds for flow equalization, screening, grit removal, communition, primary settling, activated sludge aeration, phosphorus removal, final clarification, chlorination, dechlorination, and tertiary filtration. Solid stream processes are sludge thickening, anaerobic digestion, sludge holding, sludge dewatering using centrifugation or belt filter press, and disposal by land application at agronomic rates.

The Fremont WWTP sewage collection system is a combined sewerage system comprised of approximately 25% separate sanitary and 75% combined storm and sanitary sewers. There are 13 CSOs (combined sewer overflows) in the combined portion of the system. All of the CSOs discharge to the Sandusky River. In February, 2005 the City submitted a Long Term Control Plan for CSOs to the Ohio EPA. The plan was approved in April 2010 and a compliance schedule with the major milestones of the compliance schedule was incorporated into the permit.

The City implements an Ohio EPA-approved industrial pretreatment program. The City reports that 2 categorical industrial users and 6 non-categorical significant industrial users discharge to the plant. The average daily flow from all industrial users is approximately 0.333 MGD.

Description of Existing Discharge

Table 1 presents a summary of CSO data for active CSO's during the period of January 2006 through October 2011.

Table 2 presents chemical specific data compiled from the NPDES renewal application, data reported in annual pretreatment reports, and data collected by the Ohio EPA.

Table 3 presents a summary of unaltered Discharge Monitoring Report (DMR) data for outfalls 001. Data are presented for the period of November 2006 through October 2011, and current permit limits are provided for comparison.

Table 4 summarizes the chemical specific data for outfall 2PD00007001 by presenting the average and maximum Projected Effluent Quality (PEQ) values.

Ohio EPA conducted screening bioassays in September 2010 to determine if an effluent is acutely toxic. The effluents were not acutely toxic. One daphnid died in the Sandusky River upstream water and composite effluent. No other mortality or adverse effects were observed in the remaining ambient waters and effluents for either *P. promelas* or *C. dubia*. Survival in the laboratory controls was 100 percent for both species.

Under the provisions of 40 CFR 122.21(j), the Director has waived the requirement for submittal of expanded effluent testing data as part of the NPDES renewal application. Ohio EPA has access to substantially identical information through the submission of annual pretreatment program reports and/or from effluent testing conducted by the Agency.

Assessment of Impact on Receiving Waters

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 Water Quality Standards 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 Water Quality Standards (WQS; Ohio Administrative Code 3745-1). Assessing use attainment status for aquatic life uses primarily relies on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-15). 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 (IBI) and modified Index of Well-Being (MIwb), which indicate the response of the fish community, and the Invertebrate Community Index (ICI), 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 meet the biocriteria or one of the organism groups reflects poor or very poor performance. An aquatic life use attainment table 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 (QHEI), and comments and observations for each sampling location.

Fremont WWTP
In 2009, Ohio EPA evaluated the Lower Sandusky River watershed for aquatic life and recreation use potential. Aquatic life use was in full attainment directly upstream of the Fremont WWTP at RM 17.7 and 15.4. However, sampling downstream of the WWTP at RM at 12.96 and 4.7 indicated aquatic life use was in non-attainment. The listed causes of impairment include nutrient enrichment, eutrophication, sedimentation and siltation. The listed sources of impairment included municipal point source discharges and crop production with subsurface drainage. An evaluation of the recreation use potential showed the Sandusky River was in full attainment upstream at RM 18.05 and 17.7 and downstream at RM 4.7. However, the Sandusky River was in non-attainment at RM 15.4 likely due to Fremont CSO's.

The complete details of the *2009 Biological and Water Quality Study of the Lower Sandusky River Watershed* can be viewed at the following address:
http://www.epa.ohio.gov/portals/35/documents/SanduskyTSD_2011.pdf.

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 Fremont WWTP were used to determine what parameters should undergo wasteload allocation. The parameters discharged are identified by the data available to the Ohio EPA - Discharge Monitoring Report (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)	November 2006 through October 2011
Pretreatment data	2006 through 2011
OEPA compliance sampling data	September 2010

Two high outliers for chlorine and one high outlier for summer and winter ammonia, dissolved hexavalent chromium, bis(2-ethylhexyl) phthalate, and mercury was removed from the data sets.

This data is evaluated statistically, and Projected Effluent Quality (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. The PEQ_{avg} and PEQ_{max} values are presented in Table 4.

The PEQ values are used according to Ohio rules to compare to applicable water quality standards (WQS) and allowable wasteload allocation (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 wasteload allocation is done for that parameter. If either PEQ_{avg} or PEQ_{max} is greater than 25 percent of the applicable WQS, a wasteload allocation is conducted to determine whether the parameter exhibits reasonable potential and needs to have a limit or if monitoring is required. See Table 8 for a summary of the screening results.

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 Water Quality Standards (OAC 3745-1). Most pollutants are allocated by a mass-balance method because they do not degrade in the receiving water. Wasteload allocations using this method are done 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 (WWH)		
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 6, and allocations cannot exceed the Inside Mixing Zone Maximum criteria.

Ohio's water quality standard implementation rules [OAC 3745-2-05(A)(2)(d)(iv)] required a phase out of mixing zones for bioaccumulative chemicals of concern (BCCs) as of November 15, 2010. This rule applied statewide. Mercury is a BCC. The mixing zone phase-out means that as of November 15, 2010 all dischargers requiring mercury limits in their NPDES permit must meet water quality standards at the end-of-pipe, 1.3 ng/l in the Lake Erie basin.

The data used in the WLA are listed in Tables 5 and 6. The wasteload allocation results to maintain all applicable criteria are presented in Table 7. The current ammonia limits have been evaluated using the wasteload allocation procedures and are protective of water quality standards.

Whole Effluent Toxicity WLA 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.

Water quality standards for WET are expressed in Ohio's narrative "free from" WQS rule [OAC 3745-1-04(D)]. These "free froms" are translated into toxicity units (TUs) by the associated WQS Implementation Rule (OAC 3745-2-09). Wasteload allocations can then be calculated using TUs as if they were water quality criteria.

The wasteload allocation calculations for WET are similar to those for aquatic life criteria - using the chronic toxicity unit (TU_c) and 7Q10 flow for the average and the acute toxicity unit (TU_a) and 1Q10 flow for the maximum. These values are the levels of effluent toxicity that should not cause instream toxicity during critical low-flow conditions. For (DISCHARGER), the wasteload allocation values are 0.6 TU_a and 1.28 TU_c.

The chronic toxicity unit (TU_c) is defined as 100 divided by the IC_{25}:

$$TU_c = 100/IC_{25}$$

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):

$$TU_c = 100/\text{geometric mean of NOEC and LOEC}$$

The acute toxicity unit (TU_a) is defined as 100 divided by the LC_{50} for the most sensitive test species:

$$TU_a = 100/LC_{50}$$

This equation applies outside the mixing zone for warmwater, modified warmwater, exceptional warmwater, coldwater, and seasonal salmonid use designations.

When the acute wasteload allocation is less than 1.0 TU_a, it may be defined as:

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

The acute wasteload allocation for the Fremont WWTP is 30 percent mortality in 100 percent effluent based on the dilution ratio of 1.9 to 1.

Reasonable Potential/ Effluent Limits/Hazard Management Decisions

After appropriate effluent limits are calculated, the reasonable potential of the discharger to violate the water quality standards must be determined. Each parameter is examined and placed in a defined "group". Parameters that do not have a water quality standard or do not require a wasteload allocation 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 wasteload allocations are selected from Table 7. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 4, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of

the allocated value [(PEQ_{avg} ÷ PEL_{avg}) X 100, or (PEQ_{max} ÷ PEL_{max}) X 100)], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 8.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 9 presents the final effluent limits and monitoring requirements proposed for the Fremont WWTP outfall 2PD00007 001 and the basis for their recommendation.

Proposed limits for total suspended solids (TSS), 5-day carbonaceous biochemical oxygen demand (CBOD5), and dissolved oxygen (D.O.) are technology based treatment standards included in 40 CFR Part 133, Secondary Treatment Regulation. Current permit limits for summer ammonia are adequate to maintain WQS for ammonia in the Sandusky River.

Limits proposed for oil and grease, pH, and *E.coli* are based on Water Quality Standards (OAC 3745-1-07). Water quality standards for *E. coli* became effective in March 2010. Class A Primary Contact Recreation *E.coli* standards apply to the Sandusky River. These limits have been recommended in the permit final effluent tables.

The proposed limit for total residual chlorine is based on wasteload allocation as limited by the inside mixing zone maximum (IMZM). The IMZM is a value calculated to avoid rapidly lethal conditions in the effluent mixing zone. The effluent limit for chlorine at outfall 001 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.

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

The *2009 Biological and Water Quality Study of the Lower Sandusky River Watershed* (Ohio EPA) lists the Lower Sandusky downstream of the treatment plant as impaired for aquatic life. Nutrients and organic enrichment are listed as "high magnitude" causes, and major municipal point sources are listed among the sources. Considering this information and the fact that municipal wastewater treatment plants discharge a nutrient load to the river, monthly monitoring for nitrate + nitrite and total Kjeldahl nitrogen is proposed based on best engineering judgment. Monitoring for phosphorus and nitrate + nitrite at the upstream and downstream stations also is proposed. The purpose of the monitoring is to maintain a nutrient data set for use in the future TMDL (total maximum daily loads) study.

The Ohio EPA risk assessment (Table 8) places copper, cyanide, mercury and total dissolved solids (total dissolved residue) in group 4. This placement as well as the data in Tables 2, 3 and 4 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 Rule 3745-33-07(A)(2).

In addition, the copper, cyanide and mercury effluent quality falls within 75 percent of the wasteload allocation. Under OAC 3745-33-07(A)(2), parameters in this range must have a tracking requirement in the permit that specifies reductions in pollutant concentrations if effluent concentrations exceed the WLA. The tracking/reduction requirements are included in Part II Item M of the draft permit.

Ohio EPA risk assessment (Table 8) places barium, strontium, zinc, cadmium, chromium, dissolved hexavalent chromium, lead and nickel in group 2 and 3. This placement as well as the data in Tables 2, 3 and 4 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 is proposed to document that these pollutants continue to remain at low levels.

Monitoring for Bis(2-ethylhexyl) Phthalate is proposed to be removed from the permit as only 1 sampling point out of 53 was above detection.

Limits and monitoring requirements proposed for the disposal of sewage sludge by the following management practices are based on OAC 3745-40: land application or removal to sanitary landfill or transfer to another facility with an NPDES permit.

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.

Whole Effluent Toxicity Reasonable Potential
Based on best engineering judgment and OAC 3745-33-07(B), annual chronic toxicity testing with the determination of acute endpoints is proposed for the life of the permit. The one acute screening test conducted (Table 5) does not show evidence of toxicity. However, one test conducted over a five year period does not adequately characterize the Fremont WWTP discharge with respect to toxicity. The proposed monitoring will provide four tests conducted over the term of the permit and will adequately characterize toxicity in the plants effluent.

Other Requirements

CSO Compliance Schedule
The compliance schedule in the current permit has been continued. It has been updated to reflect the selected construction alternative from the No Feasible Alternative study that was required to be completed in the current permit cycle. The compliance schedule includes projects to construct a new 24 MGD wastewater oxidation, increase capacity at the facility head works, construction of a high rate treatment facility, and to complete various separation projects within the collection system

Sanitary Sewer Overflow Reporting
Provisions for reporting sanitary sewer overflows (SSOs) are also 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
Operator certification requirements have been included in Part II, Item A of the permit in accordance with rules adopted in December 2006. These rules require the Fremont WWTP to have a Class IV wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through outfall 2PD00007001.

Operator of Record
In December 2006, Ohio Administrative Code rule revisions became effective which affect the requirements for certified operators for sewage collection systems and treatment works regulated under NPDES permits. Part II, Item A of this NPDES permit represents language necessary to implement rule 3745-7-02 of the Ohio Administrative Code (OAC), and requires the permittee to designate one or more operator of record to oversee the technical operation of the treatment works.

Storm Water Compliance

Parts IV, V, and VI have been included with the draft permit in order 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 Fremont WWTP may seek permit coverage under the general permit for industrial stormwater (permit # OHR000005) or submit a "No Exposure Certification." Parts IV, V, and VI will be removed from the final permit if: 1) the Fremont WWTP submits a Notice of Intent (NOI) for coverage under the general permit for industrial stormwater 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.

Outfall Signage

Part II of the permit includes requirements for signs to be placed at each outfall to the Sandusky River, providing information about the discharge. Signage at outfalls is required pursuant to Ohio Administrative Code 3745-33-08(A).

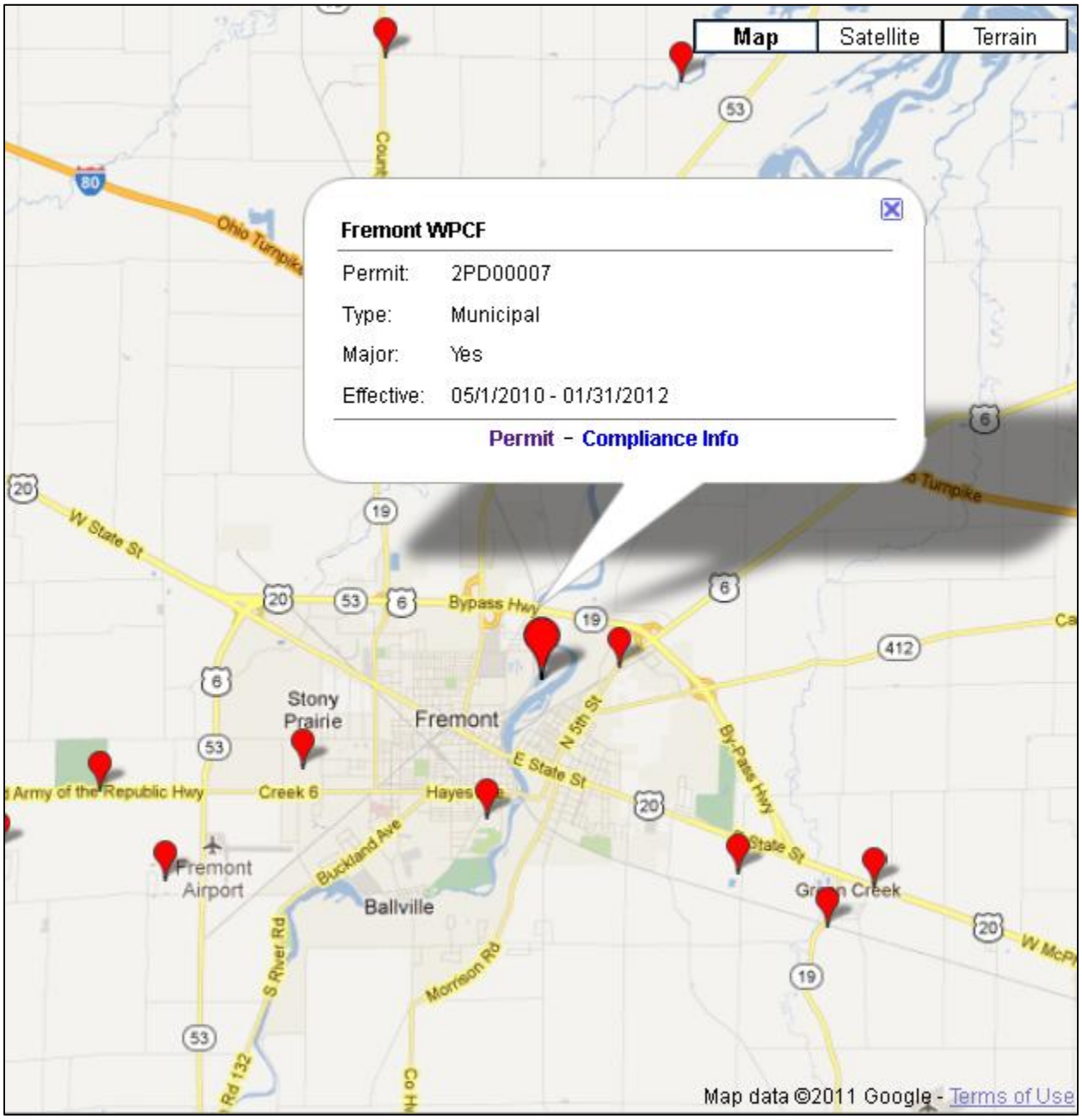

Figure 1. Approximate Location of Fremont WWTP

Table 1. Summary of CSO Data

	2006		2007		2008		2009		2010		2011	
Outfall	Occ.[a]	Vol.[b]	Occ.[a]	Vol.[b]	Occ.[a]	Vol.[b]	Occ.[a]	Vol.[b]	Occ.[a]	Vol.[b]	Occ.[a]	Vol.[b]
004	0.0	0.0	1.0	19.0	0.0	0.0	1.0	9.7	1.0	0.0	0.0	0.0
005	0.0	0.0	1.0	19.0	0.0	0.0	1.0	9.7	0.0	0.0	1.0	0.2
008	2.0	1.1	11.0	6.6	10.0	14.3	10.0	8.2	14.0	6.2	20.0	28.0
011	0.0	0.0	1.0	19.0	0.0	0.0	1.0	32.5	0.0	0.0	0.0	0.0
012	1.0	1.8	7.0	4.0	10.0	32.0	12.0	45.2	17.0	30.5	21.0	171.3
013	0.0	0.0	2.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
016	16.0	185.3	75.0	995.7	43.0	1099.1	24.0	575.1	31.0	466.7	31.0	1671.3
017	3.0	9.5	11.0	140.7	7.0	91.8	5.0	223.7	5.0	76.5	9.0	121.7

a. Overflow Occurrences in total per year
b. Overflow volume, total per year in millions of gallons

Table 2. Effluent Characterization Based on Pretreatment and Ohio EPA Data

Summary of analytical results for the Fremont WWTP outfall 2PD00007001. All values are in µg/l unless otherwise indicated. PT = data from, pretreatment program reports; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed.

PARAMETER	**PT 12/12/06**	**PT 11/13/07**	**PT** 10/07/08	**PT** 11/3/09	**PT** 11/2/10	**OEPA** 9/13/10
Ammonia (mg/l)	NA	NA	NA	NA	NA	0.131
Barium	NA	NA	NA	NA	NA	27
Cadmium	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (0.2)
Calcium (mg/l)	NA	NA	NA	NA	NA	89
Chromium	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (2)
Copper	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	3.9
Cyanide, Free	NA	NA	NA	NA	NA	6
Iron	NA	NA	NA	NA	NA	107
Lead	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (2)
Magnesium (mg/l)	NA	NA	NA	NA	NA	21
Mercury	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Nickel	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	7.7
Zinc	20	21	36	22	25	21
Total Dissolved Solids (mg/l)	NA	NA	NA	NA	NA	880
Nitrate+Nitrite (mg/l)	NA	NA	NA	NA	NA	4.64
TKN (mg/l)	NA	NA	NA	NA	NA	2.32
Total Phosphorus (mg/l)	NA	NA	NA	NA	NA	0.421
Bis(2-ethylhexyl) Phthalate	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (10.4)
Bromomethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	0.51
Chlorodibromoethane	1	1.3	ND (1)	1.6	ND (1)	2.62
Chloroform	6.6	9.5	3.9	4.5	1.8	6.11
Dichlorobromomethane	2.8	3.8	1.8	3.2	1.1	5.4

Table 3. Effluent Characterization Based on Self Monitoring Data

Summary of current permit limits and unaltered monthly operating report (MOR) data for Fremont WWTP outfall 001. All values are based on annual records unless otherwise indicated. N = Number of Analyses. * = For pH, 5th percentile shown in place of 50th percentile; ** = For dissolved oxygen, 5th percentile shown in place of 95th percentile; A = 7 day average.

			Current Permit Limits			Percentiles	
Parameter	**Season**	**Units**	**30 day**	**Daily**	**# Obs.**	**50th**	**95th**
Outfall 001							
Water Temperature	Annual	C		Monitor	1824	17.6	25.5
Dissolved Oxygen**	Summer	mg/l		5.0 min	917	6.9	5.8
Dissolved Oxygen**	Winter	mg/l		5.0 min	906	7.9	6.2
Residue, Total Dissolved	Annual	mg/l		Monitor	60	883	1380
Total Suspended Solids	Annual	mg/l	12	18[A]	1280	4	10
Oil and Grease,	Annual	mg/l		10 max	120	0	0
Nitrogen, Ammonia (NH3)	Summer	mg/l	1.1	1.7[A]	639	0.11	0.32
Nitrogen, Ammonia (NH3)	Winter	mg/l		Monitor	634	0.15	3.67
Nitrogen Kjeldahl, Total	Annual	mg/l		Monitor	70	1.4	2.33
Nitrite Plus Nitrate, Total	Annual	mg/l		Monitor	125	4.3	8.95
Phosphorus, Total (P)	Annual	mg/l	1	1.5[A]	242	0.35	0.899
Cyanide, Free	Annual	mg/l		Monitor	64	0	0.00585
Barium, Total Recoverable	Annual	ug/l		Monitor	27	37	69.7
Nickel, Total Recoverable	Annual	ug/l		Monitor	117	4	13
Strontium, Total (Sr)	Annual	ug/l	6765	92898	61	6420	7500
Zinc, Total Recoverable	Annual	ug/l		Monitor	118	22	70.6
Cadmium, Total Recoverable	Annual	ug/l		Monitor	117	0	0
Lead, Total Recoverable	Annual	ug/l		Monitor	117	0	3
Chromium, Total Recoverable	Annual	ug/l		Monitor	115	0	1
Copper, Total Recoverable	Annual	ug/l		Monitor	117	0	20.4
Chromium, Dissolved Hexavalent	Annual	ug/l		Monitor	22	0	0
Fecal Coliform	Annual	#/100 ml	1000	2000[A]	391	58	791
Bis(2-ethylhexyl) Phthalate	Annual	ug/l		Monitor	54	0	0
Flow Rate	Annual	MGD		Monitor	1826	5.72	8.68
Chlorine, Total Residual	Annual	mg/l		0.038 max	1824	0	0.003
Mercury, Total (Low Level)	Annual	ng/l	1.3	1700	61	0.59	1.68
pH, Maximum	Annual	S.U.	--	9	1824	7.25	7.53
pH, Minimum*	Annual	S.U.	--	6.5	1824	6.75	7.25
CBOD 5 day	Summer	mg/l	10	15[A]	384	2	4
CBOD 5 day	Winter	mg/l	10	15[A]	375	2	4
Outfall 300							
Overflow Occurrence	Annual	No./Month		Monitor	5	0	0
Outfall 581							
pH	Annual	S.U.		Monitor	239	8	8.22
Ammonia (NH3) In Sludge	Annual	mg/kg		Monitor	62	38000	57200

Nitrogen Kjeldahl, Total In Sludge	Annual	mg/kg		Monitor	62	86900	111000
Phosphorus, Total In Sludge	Annual	mg/kg		Monitor	45	26300	37200
Arsenic, Total In Sludge	Annual	mg/kg	--	75	61	8.5	10.7
Cadmium, Total In Sludge	Annual	mg/kg	--	85	62	1.11	1.8
Chromium, Total In Sludge	Annual	mg/kg		Monitor	44	63.5	129
Copper, Total In Sludge	Annual	mg/kg	--	4300	62	263	430
Lead, Total In Sludge	Annual	mg/kg	--	840	62	55	106
Nickel, Total In Sludge	Annual	mg/kg	--	420	62	26	50
Zinc, Total In Sludge	Annual	mg/kg	--	7500	62	477	786
Selenium, Total In Sludge	Annual	mg/kg	--	100	62	5.3	7.46
Fecal Coliform in Sludge	Annual	MPN/G	--	2000000	17	8160	12100
Sludge Fee Weight	Annual	dry tons		Monitor	104	5.35	241
Sludge Weight	Annual	Dry Tons		Monitor	253	5.48	158
Sludge Solids, Percent Total	Annual	%		Monitor	238	2.69	3.49
Sludge Solids, Percent Volatile	Annual	%		Monitor	238	62.5	66.9
Mercury, Total In Sludge	Annual	mg/kg	--	57	62	0.51	1.12
Molybdenum In Sludge	Annual	mg/kg	--	75	62	17.4	24.6
2,3,7,8'-TCDD TTE, Total in Sludge	Annual	ng/kg		Monitor	4	17.9	20.4
Outfall 586							
Sludge Fee Weight	Annual	dry tons		Monitor	2	861	897
Outfall 601							
Total Suspended Solids	Annual	mg/l		Monitor	1281	178	332
Cyanide, Total	Annual	mg/l		Monitor	64	0	0.0124
Nickel, Total Recoverable	Annual	ug/l		Monitor	116	6	29.8
Zinc, Total Recoverable	Annual	ug/l		Monitor	117	96	201
Cadmium, Total Recoverable	Annual	ug/l		Monitor	116	0	0
Lead, Total Recoverable	Annual	ug/l		Monitor	116	8	18.3
Chromium, Total Recoverable	Annual	ug/l		Monitor	114	2	6
Copper, Total Recoverable	Annual	ug/l		Monitor	116	38	76.3
Chromium, Dissolved Hexavalent	Annual	ug/l		Monitor	22	0	0
Mercury, Total (Low Level)	Annual	ng/l		Monitor	54	31.3	112
pH, Maximum	Annual	S.U.		Monitor	1294	7.38	7.75
pH, Minimum**	Annual	S.U.		Monitor	1294	6.67	7.64
CBOD 5 day	Summer	mg/l		Monitor	379	159	323
CBOD 5 day	Winter	mg/l		Monitor	363	132	245
Outfall 801							
Water Temperature	Annual	C		Monitor	56	14.5	25
Dissolved Oxygen**	Summer	mg/l		Monitor	30	8.15	6.0
Dissolved Oxygen**	Winter	mg/l		Monitor	26	12.7	12.5
pH*	Annual	S.U.		Monitor	56	7.18	8.26
Nitrogen, Ammonia (NH3)	Summer	mg/l		Monitor	30	0.0615	0.366
Nitrogen, Ammonia (NH3)	Winter	mg/l		Monitor	26	0.145	0.503
Fecal Coliform	Annual	#/100 ml		Monitor	30	380	7030
Outfall 901							
Water Temperature	Annual	C		Monitor	56	15.4	25.5
Dissolved Oxygen**	Summer	mg/l		Monitor	30	8.13	6.3

Dissolved Oxygen**	Winter	mg/l	Monitor	26	12.6	12.4
pH*	Annual	S.U.	Monitor	56	7.33	8.25
Nitrogen, Ammonia (NH3)	Summer	mg/l	Monitor	30	0.105	0.342
Nitrogen, Ammonia (NH3)	Winter	mg/l	Monitor	26	0.115	0.345
Cyanide, Total	Annual	mg/l	Monitor	57	0	0.006
Hardness, Total (CaCO3)	Annual	mg/l	Monitor	56	242	392
Nickel, Total Recoverable	Annual	ug/l	Monitor	56	8	45.3
Zinc, Total Recoverable	Annual	ug/l	Monitor	56	47	176
Cadmium, Total Recoverable	Annual	ug/l	Monitor	56	0	0
Lead, Total Recoverable	Annual	ug/l	Monitor	56	4	15.3
Chromium, Total Recoverable	Annual	ug/l	Monitor	55	0	20.5
Copper, Total Recoverable	Annual	ug/l	Monitor	56	13	63.3
Chromium, Dissolved Hexavalent	Annual	ug/l	Monitor	20	0	0
Fecal Coliform	Annual	#/100 ml	Monitor	30	275	5080

Table 4. Summary of Effluent Data for Fremont WWTP

Parameter	Units	# of Samples	# > MDL	PEQ Average	PEQ Maximum
Ammonia-S	mg/l	425	423	0.1796	0.30666
Ammonia-W	mg/l	312	311	1.066	2.5206
Barium	ug/l	28	28	68.965	102.24
Bis(2-ethylhexyl)phthalate	ug/l	53	0	--	--
Bromodichloromethane	ug/l	6	6	8.2782	11.34
Bromomethane	ug/l	1	1	2.30826	3.162
Cadmium - TR	ug/l	117	0	--	--
Chlorides	mg/l	1	1	1045.506	1432.2
Chlorine - TRes	mg/l	1822	270	0.002566	0.002845
Chlorodibromomethane	ug/l	6	4	4.01646	5.502
Chloroform (Trichloromethane)	ug/l	6	6	14.5635	19.95
Chromium - TR	ug/l	115	9	3.504	4.8
Chromium VI - Diss	ug/l	21	0	--	--
Copper - TR	ug/l	118	33	21.63	31.115
Cyanide - free	mg/l	65	7	0.005507	0.00862
Dissolved solids (ave)	mg/l	60	60	1154.4	1426.2
Iron - TR	ug/l	1	1	470.704	644.8
Lead - TR	ug/l	117	9	2.4419	3.7344
Mercury - TR (BCC)	ng/l	60	40	1.1668	1.7282
Nickel - TR	ug/l	118	95	11.968	18.376
Nitrate-N + Nitrite-N	mg/l	126	126	8.5358	12.747
Phenol	ug/l	1	1	12.2202	16.74
Phosphorus	mg/l	242	242	0.74452	1.0973
Strontium	ug/l	61	61	7055.7	7835.4
TKN	mg/l	71	61	2.1089	2.8939
Zinc - TR	ug/l	124	104	61.331	93.913

Table 5. 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-S	mg/l	--	--	--	1	--	--
Ammonia-W	mg/l	--	--	--	3.1	--	--
Barium	ug/l	--	160000	--	220	2000	4000
Bis(2-ethylhexyl)phthalate	ug/l	--	32c	--	8.4	1100	2100
Bromodichloromethane	ug/l	--	180c	--	340	3100	6200
Bromomethane	ug/l	--	2600	--	16	38	75
Cadmium - TR	ug/l	--	730	50	4.9	12	24
Chlorides	mg/l	--	--	--	--	--	--
Chlorine - TRes	mg/l	--	--	--	0.011	0.019	0.038
Chlorodibromomethane	ug/l	--	150	--	320	2900	5800
Chloroform (Trichloromethane)	ug/l	--	1700c	--	140	1300	2600
Chromium - TR	ug/l	--	14000	100	180	3700	7400
Chromium VI - Diss	ug/l	--	14000	--	11	16	31
Copper - TR	ug/l	--	64000	500	20	32	64
Cyanide - free	mg/l	--	48	--	0.0052	0.022	0.044
Dissolved solids (ave)	mg/l	--	--	--	1500	--	--
Iron - TR	ug/l	--	--	5000	--	--	--
Lead - TR	ug/l	--	--	100	20	380	750
Mercury - TR (BCC)	ng/l	1.3	3.1	10000	910	1700	3400
Nickel - TR	ug/l	--	43000	200	110	990	2000
Nitrate-N + Nitrite-N	mg/l	--	--	100	--	--	--
Phenol (wwh,ewh,mwh)	ug/l	--	2400	--	400	4700	9400
Phosphorus	mg/l	--	--	--	--	--	--
Strontium	ug/l	--	1400000	--	21000	40000	81000
TKN	mg/l	--	--	--	--	--	--
Zinc - TR	ug/l	--	35000	25000	250	250	510
Arsenic - TR	ug/l	--	580	100	150	340	680
Molybdenum	ug/l	--	10000	--	20000	190000	370000
Selenium - TR	ug/l	--	3100	50	5	--	--

Table 6. Instream Conditions and Discharger Flow

Parameter	Units	Season	Value	Basis
Stream Flows				
1Q10	cfs	annual	11	USGS #04198000
7Q10	cfs	annual	13	USGS #04198000
		summer	13	USGS #04198000
		winter	40	USGS #04198000
30Q10	cfs	summer	19	USGS #04198000
		winter	59	USGS #04198000
90Q10	cfs	annual	29	
Harmonic Mean	cfs	annual	106	USGS #04198000
Mixing Assumption	%	average	25	
	%	maximum	100	
Hardness	mg/l	annual	314	901 station, 56 obs.
pH	S.U.	summer	7.9975	901 station, 20 obs
		winter	8.045	901 station, 11 obs
Temperature	C	summer	24.75	901 station, 20 obs
		winter	7	901 station, 11 obs
Fremont WPC flow	cfs	annual	11.8	DSW

Parameter	Units	Season	Value	Basis
Background Water Quality				
Ammonia-S	mg/l		0	SWIMS; 2006-2011; n=20; 12<MDL; 801 station, 50th percentile
Ammonia-W	mg/l		0.16	SWIMS; 2006-2011; n=11; 3<MDL; 801 station, 50th percentile
Barium	ug/l		60	STORET; 2009-2010; n=11; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Bis(2-ethylhexyl)phthalate	ug/l		0	STORET; 2009-2010; n=2; 2<MDL; Station U04S23
Bromodichloromethane	ug/l		0	STORET; 2009-2010; n=2; 2<MDL; Station U04S23
Bromomethane	ug/l		0	STORET; 2009-2010; n=2; 2<MDL; Station U04S23
Cadmium - TR	ug/l		0	STORET; 2009-2010; n=11; 11<MDL; Stations U04W11 and U04S23
Chlorides	mg/l		41	STORET; 2009-2010; n=13; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Chlorine - TRes	mg/l		0	No representative data available.
Chlorodibromomethane	ug/l		0	STORET; 2009-2010; n=2; 2<MDL; Station U04S23
Chloroform	ug/l		0	STORET; 2009-2010; n=2; 2<MDL; Station U04S23
Chromium - TR	ug/l		1	STORET; 2009-2010; n=11; 7<MDL; Stations U04W11 and U04S23, 50th percentile
Chromium VI - Diss	ug/l		0	No representative data available.
Copper - TR	ug/l		3.1	STORET; 2009-2010; n=11; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Cyanide - free	mg/l		0	No representative data available.
Dissolved solids (ave)	mg/l		446	STORET; 2009-2010; n=13; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Iron - TR	ug/l		1150	STORET; 2009-2010; n=11; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Lead - TR	ug/l		1	STORET; 2009-2010; n=11; 7<MDL; Stations U04W11 and U04S23, 50th percentile
Mercury - TR (BCC)	ng/l		0	No representative data available.
Nickel - TR	ug/l		3.7	STORET; 2009-2010; n=11; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Nitrate-N + Nitrite-N	mg/l		1.27	STORET; 2009-2010; n=13; 4<MDL; Stations U04W11 and U04S23, 50th percentile
Phenol	ug/l		0	STORET; 2009-2010; n=2; 2<MDL; Station U04S23
Phosphorus	mg/l		0.095	STORET; 2009-2010; n=13; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Strontium	ug/l		2700	STORET; 2009-2010; n=11; 0<MDL; Stations U04W11 and U04S23, 50th percentile
TKN	mg/l		0.67	STORET; 2009-2010; n=13; 0<MDL; Stations U04W11 and U04S23, 50th percentile
Zinc - TR	ug/l		10	STORET; 2009-2010; n=10; 5<MDL; Stations U04W11 and U04S23, 50th percentile

Parameter	Units	Season	Value	Basis
Arsenic - TR	ug/l		0	No representative data available.
Molybdenum	ug/l		0	No representative data available.
Selenium - TR	ug/l		0	No representative data available.

Table 7. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

		Outside Mixing Zone Criteria					Inside Mixing
		Average				Maximum	
Parameter	Units	Wildlife	Human Health	Agri-culture	Aquatic Life	Aquatic Life	Zone Maximum
Ammonia-S	mg/l	--	--	--	--	--	--
Ammonia-W	mg/l	--	--	--	--	--	--
Barium	ug/l	--	519187	--	264	3808	4000
Bis(2-ethylhexyl)phthalate	ug/l	--	104	--	11	2125	2100
Bromodichloromethane	ug/l	--	584	--	434	5990	6200
Bromomethane	ug/l	--	8439	--	20	73	75
Cadmium - TR	ug/l	--	2369	162	6.2	23	24
Chlorides	mg/l	--	--	--	--	--	--
Chlorine - TRes	mg/l	--	--	--	0.014	0.037	0.038
Chlorodibromomethane	ug/l	--	487	--	408	5603	5800
Chloroform (Trichloromethane)	ug/l	--	5518	--	179	2512	2600
Chromium - TR	ug/l	--	45438	322	229	7148	7400
Chromium VI - Diss	ug/l	--	45441	--	14	31	31
Copper - TR	ug/l	--	207722	1616	25	59	64
Cyanide - free	mg/l	--	156	--	0.0066	0.043	0.044
Dissolved solids (ave)	mg/l	--	--	--	1790	--	--
Iron - TR	ug/l	--	--	13646	--	--	--
Lead - TR	ug/l	--	--	322	25	733	750
Mercury - TR (BCC)	ng/l	1.3	3.1	10000	910	1700	3400
Nickel - TR	ug/l	--	139559	641	139	1909	2000
Nitrate-N + Nitrite-N	mg/l	--	--	322	--	--	--
Phenol	ug/l	--	7790	--	510	9081	9400
Phosphorus	mg/l	--	--	--	--	--	--
Strontium	ug/l	--	4538004	--	26040	74771	81000
TKN	mg/l	--	--	--	--	--	--
Zinc - TR	ug/l	--	113579	81122	316	474	510
Arsenic - TR	ug/l	--	1883	325	191	657	680
Molybdenum	ug/l	--	32458	--	25508	367119	370000
Selenium - TR	ug/l	--	10062	162	6.4	--	--

Table 8. Parameter Assessment for Outfall 001

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

Chlorides	Phosphorus	TKN

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

Bis(2-ethylhexyl)phthalate	Bromodichloromethane	Bromomethane
Cadmium - TR	Chlorine - TRes	Chlorodibromomethane
Chloroform (Trichloromethane)	Chromium - TR	Chromium VI - Diss
Iron - TR	Lead - TR	Nickel - TR
Nitrate-N + Nitrite-N	Phenol	

Group 3: PEQ_{max} < 50 percent of maximum PEL and PEQ_{avg} < 50 percent of average PEL.
No limit recommended; monitoring optional.

Barium	Strontium	Zinc - TR

Group 4: PEQ_{max} >= 50 percent, but < 100 percent of the maximum PEL or
PEQ_{avg} >= 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Copper - TR	Cyanide - free	Dissolved solids (ave)
Mercury - TR (BCC)		

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	Period	Average	Maximum

Cyanide - free requires a permit tracking requirement in accordance with OAC 3745-33-07(A)(2) since the PEQ is > or = 75 percent of the PEL.

Mercury - TR (BCC) requires a permit tracking requirement in accordance with OAC 3745-33-07(A)(2) since the PEQ is > or = 75 percent of the PEL.

Copper - TR (BCC) requires a permit tracking requirement in accordance with OAC 3745-33-07(A)(2) since the PEQ is > or = 75 percent of the PEL.

Table 9. Final Effluent Limits and Monitoring Requirements for 001

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Flow	MGD	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Temperature	ºC	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Dissolved Oxygen	mg/l	- - - - - - - - - -	5.0 minimum	- - - - - - - - - - - - - - -		PD
$CBOD_5$	mg/l	10	15[c]	288	435[d]	PD, EP
Suspended Solids	mg/l	12	18[c]	346	509[d]	PD, EP
Ammonia-N	mg/l					
Summer		1.1	1.7[c]	31.7	48.9[d]	EP
Winter		- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP
TKN	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP/BEJ
Nitrite + Nitrate	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP/BEJ
Phosphorus	mg/l	1.0	1.5[c]	28.8	43.15[d]	P
Oil and Grease	mg/l	--	10	--	--	WQS
pH	S.U.	- - - - - - - - - - - - -	6.5 to 9.0	- - - - - - - - - - - - -		WQS
E.Coli	#/100ml					
Summer		126	284[c]	--	--	WQS
Chlorine Residual	mg/l	--	0.038	--	--	WLA
Cyanide, Free	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Cadmium, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Chromium, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Hex. Chromium (Dissolved)	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Copper, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Lead, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Mercury, T.	ng/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		RP
Nickel, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Strontium	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Zinc, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Dissolved Solids, Total	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M
Whole Effluent Toxicity						
Acute	TUa	- - - - - - - -	Monitor (w/o trigger)	- - - - - - - - - -		WET
Chronic	TUc	- - - - - - - -	Monitor (w/o trigger)	- - - - - - - - - -		WET

Table 9. Continued.

[a] Effluent loadings based on average design discharge flow of 7.6 MGD.

[b] Definitions: ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); AD = Antidegradation (OAC 3745-1-05); EP = Existing Permit; IJC = 1988 revision of the 1972 Great Lakes Water Quality Agreement of the International Joint Commission; M = BEJ of Permit Guidance 1: Monitoring Frequency Requirements for Sanitary Discharges; PD = Plant Design Criteria; RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A)); WET = Whole Effluent Toxicity (OAC 3745-33-07(B)) ; WLA = Wasteload Allocation procedures (OAC 3745-2); WLA/IMZM = Wasteload Allocation limited by Inside Mixing Zone Maximum; WQS = Ohio Water Quality Standards (OAC 3745-1). P = Phosphorus treatment required under OAC 3745-33-06(C)

[c] 7 day average limit.