National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for Cleveland-Cliffs Steel Corporation – Coshocton Works

Public Notice No.: 205702
Public Notice Date: August 29, 2024
Comment Period Ends: September 28, 2024

Ohio EPA Permit No.: 0ID00014*QD
Application No.: OH0004260

Name and Address of Applicant:
Cleveland-Cliffs Steel Corporation –
Coshocton Works
17400 State Route 16
Coshocton, OH 43812

Name and Address of Facility Where Discharge Occurs:
Cleveland-Cliffs Steel Corporation –
Coshocton Works
17400 State Route 16
Coshocton, OH 43812
Coshocton County

Receiving Water: Muskingum River

Subsequent Stream Network: Ohio River

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

New monitoring and a limit are proposed for total residual oxidants at outfall 001 based on Best Technical Judgement(BTJ) in association with chemical treatment additives containing chlorine, bromine and hydrogen peroxide. A compliance schedule is proposed to assess acquisition of monitoring equipment, process control, and potential of needs for additional treatment to achieve compliance with the proposed limit.

Storm water monitoring and benchmarks for total recoverable zinc and total suspended solids are proposed in the permit. Benchmark for total suspended solids is provided as a substitute parameter in lieu of aluminum to the monitoring and benchmark requirements for stormwater associated with industrial activities subsector F1 as referenced in General Permit number OHR000007.

In accordance with Ohio Administrative Code (OAC) 3745-33-07, it has been determined that the effluent from Cleveland-Cliffs Steel Corporation - Coshocton Works does not currently exhibit reasonable potential for acute toxicity to *Ceriodaphnia Dubia.* Monitoring is proposed at reduced frequency to assess whether historical toxicity issues return.

Continuous pH monitoring is provided for flows associated with 001 prior to the 602 contributions. The duration of maximum excursion limitation of 60 minute and monitoring reporting code has been removed from the reporting requirements as it was duplicated by reporting the number of excursions exceeding 60 minutes.

The annual sludge reporting under outfall 588 has been changed from being required in September to the month of December.

Monitoring for nitrite, nitrate, fluoride, dissolved hexavalent chromium, nickel, copper, temperature and total filterable residue at outfall 001 is proposed at a reduced frequency. Nitrite and Nitrate monitoring is proposed to be combined under one monitoring parameter.

Oil & Grease limits have been removed at outfall 001 as it was determined that the effluent does not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring is proposed to continue at a reduced frequency to document that that Oil & Grease continues to remain at low levels.

Hexavalent chromium monitoring code has been reassigned to 01220 – Chromium, Dissolved Hexavalent.

In Part II of the permit, special conditions are included that address storm water compliance; operator certification, minimum staffing and operator of record; whole effluent toxicity (WET) testing; tracking requirement for total residual chlorine; 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 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 Aaron Pennington, 740-380-5272, aaron.pennington@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

Cleveland-Cliffs Steel Corporation – Coshocton Works discharges to Muskingum River at River Mile 105.88. Figure 1 shows the approximate location of the facility.

This segment of the Muskingum River is described by Ohio EPA River Code: 17-001, Large River Assessment Unit 05040004-90-01, County: Coshocton, Ecoregion: Western Allegheny Plateau. The Muskingum River is designated for the following uses under Ohio's WQS (OAC 3745-1-07): Warmwater Habitat, Agricultural Water Supply, Industrial Water Supply, and 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

Cleveland-Cliffs Steel Corporation – Coshocton Works is a specialty steel finishing facility. The industrial processes at the facility include:

- Cold reduction
- Annealing
- Salt bath descaling
- Acid Pickling
- Shot blasting
- Grinding
- Buffing
- Slitting

The process operations at Cleveland-Cliffs Steel Corporation – Coshocton Works are classified in the Standard Industrial Classification (SIC) category 3316, Cold Rolled Steel Sheet, Strip and Bars. The process wastewaters generated from these operations are regulated under 40 CFR Part 420, "Iron and Steel Manufacturing Point Source Category":

- Subpart H, Salt Bath Descaling Subcategory

• Subpart I, Acid Pickling Subcategory
• Subpart J, Cold Forming Subcategory
• Subpart K, Alkaline Cleaning Subcategory

Cleveland-Cliffs Steel Corporation – Coshocton Works obtains water from well water for process operations and non-contact cooling water (NCCW).

DESCRIPTION OF EXISTING DISCHARGE

Cleveland-Cliffs Steel Corporation – Coshocton Works has two final outfalls, three internal monitoring stations, and a sludge reporting station (See Table 1). Outfall 001 discharges treated process wastewater, sanitary wastewater effluent, storm water, NCCW, and excess well water. Outfall 002 serves as a discharge outlet from a recently installed stormwater basin for the drainage from the new continuous anneal line building area. Outfall 002 is directed to unnamed tributary to the Muskingum River and has not discharged since being installed due to the infiltration design of the stormwater retention basin. Internal monitoring station 601 monitors the treated process wastewater prior to commencing the new vertical anneal line, whereas the treated process wastewater will then be monitored and reported under station 603. The new vertical anneal line is anticipated to commence operations within the duration of the proposed permit. Figure 2 provides a flow schematic of the wastewater sources and supplies associated with Cleveland-Cliffs Steel Corporation – Coshocton Works. Process wastewater is treated by the following processes:

• Chemical Reduction
• Neutralization
• Chemical precipitation
• Flocculation
• Clarification
• Thickening
• Sludge dewatering

Internal monitoring station 602 monitors the treated sanitary wastewater prior to discharging to Outfall 001. Sanitary waste is treated by the follow processes: extended aeration, clarification, and UV Disinfection. Sludge is disposed of at another permitted NPDES WWTP and monitored under outfall 588.

There were no effluent violations reported during the review timeframe of May 2018 through April 2023. The average flow rates for the permit cycle for outfall 001 and monitoring stations 601 and 602 are shown on Table 2.

Table 3 presents data compiled from the NPDES permit renewal application Form 2C.

Table 4 presents a summary of unaltered Discharge Monitoring Report (DMR). Data are presented for the period May 2018 through April 2023 and current permit limits are provided for comparison.

Table 5 summarizes the chemical specific data for outfall 001 by presenting the average and maximum PEQ values.

Table 6 summarizes the results of acute and chronic WET tests of the final effluent.

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 Muskingum River Large River watershed assessment unit, which includes the Muskingum River in the vicinity of Cleveland-Cliffs Steel Corporation – Coshocton Works, is listed as impaired for human health and recreation on Ohio's 303(d) list. The impairment for human health is shown due to PCBs in fish tissue and the impairment for recreation is shown due to elevated concentrations of Escherichia Coli (E. coli). The Cleveland-Cliffs Steel Corporation – Coshocton Works has not been identified as a source of the PCBs and limits have been applied to prevent E. coli in the effluent at levels that would contribute to the impairment.

The full Integrated Report is available through the Ohio EPA, Division of Surface Water website at: https://epa.ohio.gov/static/Portals/35/tmdl/2022intreport/Full-2022-IR.pdf

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 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.

Biological sampling conducted during the 2006 field season in the Muskingum River showed Full Attainment of the WWH use designation both upstream and downstream of the Cleveland Cliffs – Coshocton Works. The attainment status of the Muskingum River Watershed is reported in the Final Ohio 2022 Integrated Water

Quality Monitoring and Assessment Report. Sampling conducted in 2020 and 2021continue to show the Muskingum River in Full Attainment of the WWH use designation as summarized at:

https://epa.ohio.gov/static/Portals/35/tmdl/LargeRiverSurvey-DataSummary-2023.pdf

More information can be found in the technical support document: Biological and Water Quality Study of the Muskingum River 2006; March 2007.

A summary of the results from the above reports for the portions of the Muskingum River in the vicinity of the Coshocton WWTP and the Cleveland Cliffs – Coshocton Works discharges can be found in Table 7.

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 Cleveland Cliffs – Coshocton Works 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 required by the NPDES application or other special conditions in the NPDES permit. The sources of effluent data used in this evaluation are as follows:

Self-monitoring data (DMR)	May 2018 through April 2023
NPDES application Form 2C data	2023

Statistical Outliers and Other Non-representative Data

The data were examined and the following values were removed from the evaluation to give a more reliable PEQ:

- Total Filterable Residue, 336mg/L, 6/8/20, significantly lower than next lowest and removal improved r-squared value.
- Fluoride, 1.19mg/L and 0.8mg/L, 6/8/20 and 3/9/23 respectively, both values significantly lower than next lowest and removal improved r-squared value.
- Oil & Grease, 14mg/L, 5/14/18, was the only sample out of 241 observations with a result reported greater than method detection limit. The 14mg/L result was more than 2.5 times the MDL.
- Self- monitoring data for zinc was associated with storm water grab sampling intended to assess first flush conditions in lieu of composite samples intended for determining projected effluent quality values. Therefore, the four self-monitoring data points were removed from consideration for determining projected effluent quality values.

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 5).

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 8).

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 degrade 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 free-flowing receiving water/stream or 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 following dischargers to the Muskingum River were considered interactive (see Figure 3):

- Coshocton WWTP
- Cleveland-Cliffs Steel Corporation – Coshocton Works

The Coshocton WWTP and Cleveland Cliffs – Coshocton Works outfalls were allocated together for most parameters due to the size of the plant discharges, the flows of the Muskingum River, and the relatively close proximity of the discharge points.

The available assimilative capacity was distributed among them using the conservative substance wasteload allocation (CONSWLA) water quality model for conservative parameters. CONSWLA is the model Ohio EPA typically uses in multiple discharger situations. CONSWLA model inputs for flow are fixed at their critical low levels and inputs for effluent flow are fixed at their design or 50th percentile levels. Background concentrations are fixed at a representative value (generally a 50th percentile) using available ambient stream data from upstream sampling stations. A mass balancing method is then used to allocate effluent concentrations that maintain WQS under these conditions. This technique is appropriate when data bases are unavailable to generate statistical distributions for inputs and if the parameters modeled are conservative.

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
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 9, and allocations cannot exceed the Inside Mixing Zone Maximum (IMZM) criteria. The data used in the WLA are listed in Table 8 and Table 9. The WLA results to maintain all applicable criteria are presented in Table 10.

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 tests measure survival and mortality of the test organism over a short time period (48- or 96-hours). Chronic WET tests measure survival and mortality, as well as effects on growth and reproduction over a longer period of the test organism's life.

WQS 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 (i.e. TUa and TUc) for use in NPDES permits by the associated WQS Implementation Rule (OAC 3745-2-09). The translation results in numeric values of 0.3 TUa and 1.0 TUc. WLAs can then be calculated using these values as if they were water quality criteria.

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 Cleveland-Cliffs Steel Corporation – Coshocton Works, the WLA values for outfall 001 are 1.0 TUa and 149.5 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.

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 10. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 5Table 5, 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 11.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 12 presents the final effluent limits and monitoring requirements proposed for Cleveland-Cliffs Steel Corporation - Coshocton Works outfall(s) 001, 002 and internal monitoring stations 601, 602 and 603 and the basis for their recommendation. Unless otherwise indicated, the monitoring frequencies proposed in the permit are continued from the existing permit.

Outfall 001

pH

Current permit limits for pH are proposed to remain in the renewal permit. Effluent pH limitations under continuous monitoring are provided pursuant 40 CFR 401.17. The acceptable pH range is 6.5 to 9.0 as established by Ohio Water Quality Standards. A condition in Part II includes the pH excursion limitations and reporting requirements.

Oil & Grease

Only one observation out of 241 observations was reported greater than MDL and was determined to be an outlier. Oil & Grease is placed in Group 2. This placement supports that Oil & Grease does not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Limits have been removed and monitoring is proposed to continue at a reduced frequency to document that that Oil & Grease continues to remain at low levels.

Total Residual Oxidants

Total Residual Oxidants is a measure of various residual oxidants. Cleveland-Cliffs Steel Corporation identifies various chemical treatment additives used at the facility, some of which contain bromine, hydrogen peroxide, and chlorine that would all cumulatively be assessed as total residual oxidants without speciation. The process flows containing chemical treatment additives comprised of hydrogen peroxide and bromine are directed to the process treatment plant’s reaction tank where any residual oxidants would react with sodium bisulfite laden salt bath descaling wastewaters that received hexavalent chromium reduction. In addition, lime and polymer are added in the reaction tank. Flows containing residual chlorine which is present in the potable water supply are directed to the sanitary treatment plant where activated sludge process is employed. Any residual chlorine would be eliminated with inbound wastewaters or in the event levels persisted throughout the sanitary treatment plant it would cause an upset of the activated sludge process. The Ohio EPA risk assessment shown in Table 11 places total residual chlorine in group 5, which recommends limits to protect water quality. Upon more intensive review of the PEQ values calculated for total residual chlorine (Table 5), no limits are proposed specific to total residual chlorine. The PEQs were based on one data point using a colorimetric method that has many possible interferences, specifically the fluoride concentrations in the effluent sample are in a range known to cause significant interferences. A sample was analyzed for total residual oxidants on October 13, 2023 using

amperometric titration and reported less than detection of 0.003 mg/L using a TitraLab AT1000 Series instrument. The less than detection value of 0.003 mg/L using amperometric titration is the only assessed measurement that did not involve a significant interference and accounts for the summation of bromine, hydrogen peroxide and residual chlorine. This value would lead to a Group 2 placement using reasonable potential analysis. However, the IMZM WQS associated with bromine 0.0048 mg/L is proposed as a limit for total residual oxidants based on Best Technical Judgement (BTJ) due to the use of treatment additives. The bromine IMZM WQS is the most stringent in comparison to residual chlorine 0.038 mg/L and hydrogen peroxide 0.180 mg/L when analyzed using total residual oxidants testing methods. The limit associated with bromine ensures that despite the various speciation that water quality standards are not exceeded. A special condition is provided in the permit regarding the Ohio EPA Quantification Level of 0.050 mg/L for total residual oxidants. A compliance schedule for 36 months is included to assess acquisition of monitoring equipment, process control, and potential of needs for additional treatment to achieve compliance with the proposed limit.

Nitrite, Nitrate, Fluoride, Dissolved Hexavalent Chromium, Nickel, Copper, Mercury and Total Filterable Residue

The Ohio EPA risk assessment (Table 11) places nitrite, nitrate, fluoride, dissolved hexavalent chromium, nickel, copper, mercury and total filterable residue in groups 2 and 3. This placement, as well as the data in Table 4 and Table 5, 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 at a reduced frequency is proposed to document that these pollutants continue to remain at low levels. Nitrite and Nitrate monitoring is proposed to be combined under one monitoring parameter. Hexavalent chromium monitoring code has been reassigned to 01220 – Chromium, Dissolved Hexavalent.

Ammonia, Barium, Cadmium, Chromium, Iron, Molybdenum, and Selenium

The Ohio EPA risk assessment (Table 11) places ammonia, barium, cadmium, chromium, iron, molybdenum and selenium in groups 2 and 3. This placement, as well as the data in Table 4 and Table 5, 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.

Temperature and Flow

Monitoring for these parameters is proposed to continue in order to evaluate the performance of the treatment facilities. Temperature monitoring is proposed at a reduced frequency as temperature does not have reasonable potential to contribute to WQS exceedance.

Whole Effluent Toxicity Reasonable Potential

Based on evaluating the WET data presented in Table 6, Attachment 3 and other pertinent data under the provisions of OAC 3745-33-07(B), the Cleveland-Cliffs Steel Corporation - Coshocton Works is placed in Category 4 with respect to WET. No limits are proposed. Acute toxicity testing is proposed to continue for Ceriodaphnia dubia at a reduced frequency to assess whether historical toxicity issues return.

Zinc and Total Suspended Solids

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. Storm water monitoring and benchmarks for total recoverable zinc and total suspended solids are proposed. Benchmark for total suspended solids is provided as a substitute parameter in lieu of aluminum to the monitoring and benchmark requirements for stormwater associated with industrial activities subsector F1 as referenced in General Permit number OHR000007. See Part V for more details.

Outfall 002

Zinc and Total Suspended Solids

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. Storm water monitoring and benchmarks for total recoverable zinc and total suspended solids are proposed. Benchmark for total suspended solids is provided as a substitute parameter in lieu of aluminum to the monitoring and benchmark requirements for stormwater associated with industrial activities subsector F1 as referenced in General Permit number OHR000007. See Part V for more details.

Internal Monitoring Stations 601 and 603

Total Suspended Solids, Oil & Grease, Chromium and Nickel

Federal effluent guideline limitations (ELGs) are based on available treatment technology. Federal and State laws and regulations require that dischargers meet both the ELGs and any values needed to comply with state WQS. Permit limits are based on the more stringent of the two. The limits recommended for total suspended solids, oil & grease, chromium, and nickel are based on the federal effluent limitation guidelines (ELGs) found in 40 CFR Part 420. All limits are shown tabulated in Attachment 1. Internal monitoring station 601 is intended to apply up until the continuous anneal operation commences operations. Upon startup of the continuous anneal line, the treated process wastewaters are to be reported under internal monitoring station 603.

Dissolved Hexavalent Chromium

Based on best technical judgment, monitoring and limits for dissolved hexavalent chromium are proposed to remain in the permit as previously permitted to ensure the facility adequate provides reduction to the associated wastewaters containing dissolved hexavalent chromium.

Copper, Flow and pH

Monitoring for these parameters is proposed to continue in order to evaluate the performance of the treatment plant.

Napthalene and Tetrachloroethylene

A monitoring waiver is proposed to continue for napthalene and tetrachloroethylene pursuant 40 CFR 122.44(a)(2) as the permittee has demonstrated through sampling and other technical factors that the pollutant is not present in the discharge.

Internal Monitoring Stations 602

Total Suspended Solids and 5-day Carbonaceous Biochemical Oxygen Demand

The limits proposed for total suspended solids and 5-day carbonaceous biochemical oxygen demand are all based on plant design criteria and technology-based treatment standards included in 40 CFR Part 133, Secondary Treatment Regulation. Secondary treatment is defined by the Best Practicable Waste Treatment Technology criteria, which are minimum standards required of all publicly owned treatment works. These limits are protective of WQS.

Fecal Coliform

Based on best technical judgment, monitoring and limits for fecal coliform are proposed to remain in the permit as previously permitted to ensure facility adequate provides disinfection to treated sanitary wastewaters during recreational season.

Flow and pH

Monitoring for these parameters is proposed to continue in order to evaluate the performance of the treatment plant.

Additional Monitoring Requirements

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
Monitoring requirements proposed for the disposal of sewage sludge by the following management practices are based on OAC 3745-40: transfer to another facility with an NPDES permit.

OTHER REQUIREMENTS

Operator Certification and Operator of Record
Operator certification requirements have been included in Part II of the permit in accordance with rules adopted in August 2018 (OAC 3745-7-02). These rules require the Cleveland-Cliffs Steel Corporation - Coshocton Works to have a Class A wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through internal monitoring station 602. These rules also require the permittee to designate one or more operator of record to oversee the technical operation of the treatment works.

Outfall Signage
Part II of the permit includes requirements for the permittee to place and maintain a sign at outfall 001 discharging to the Muskingum 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.

Storm Water Compliance
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. Benchmark monitoring for outfalls 001 and 002 is proposed in accordance with the storm water language. See Part V for more details.

Figure 1. Location of Cleveland-Cliffs Steel Corporation – Coshocton Works

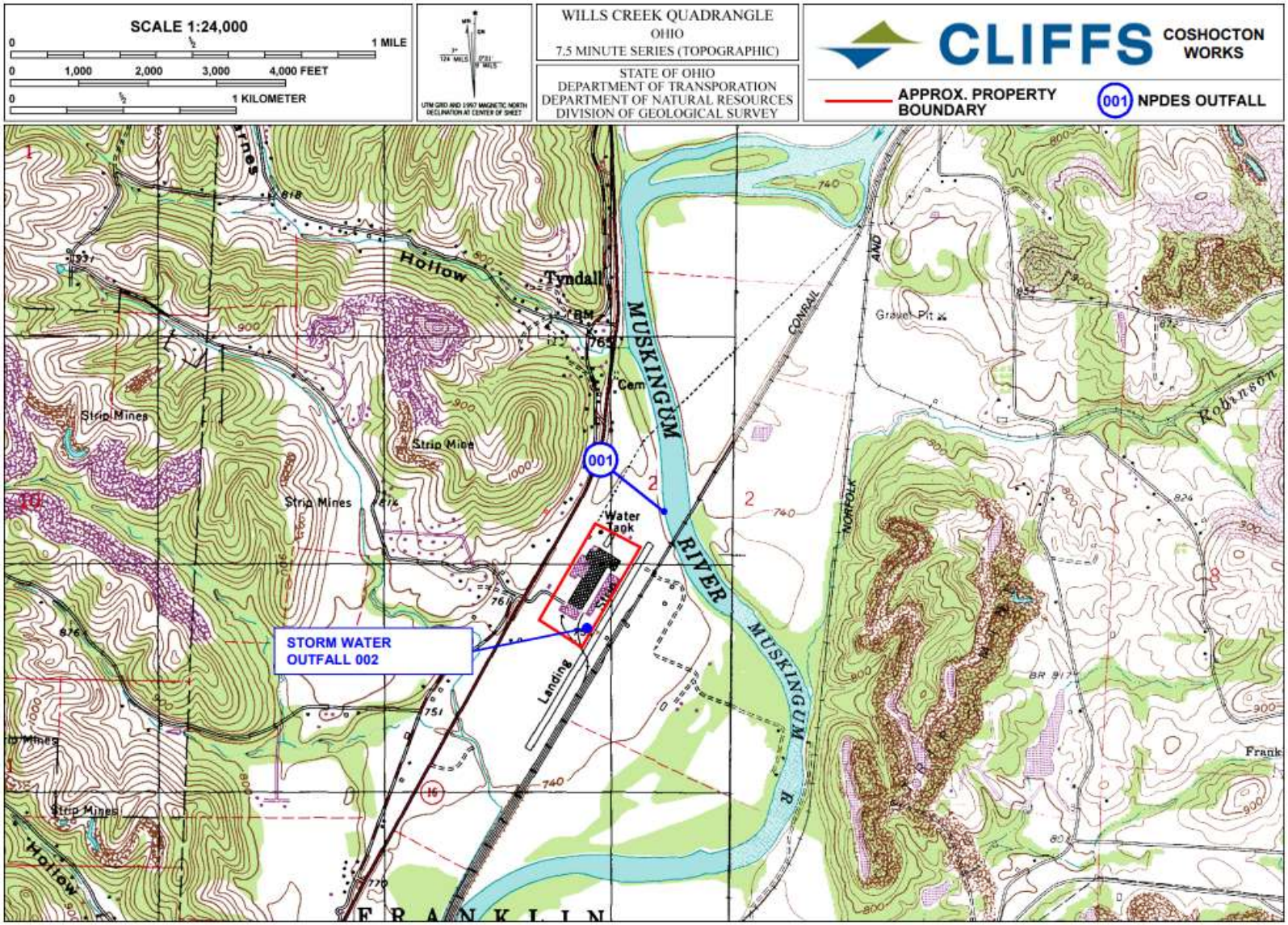

Figure 2. Water Balance Diagram

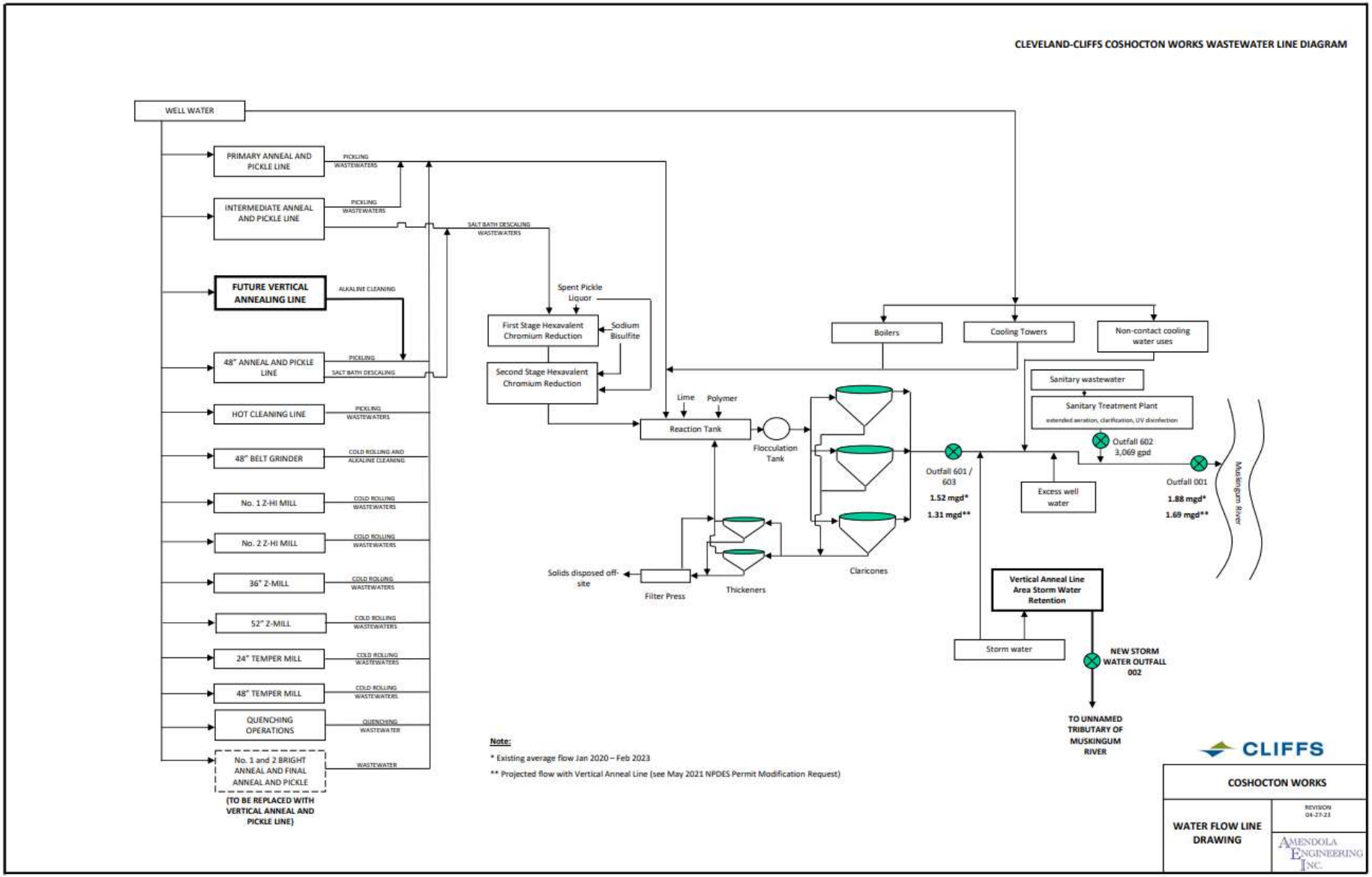

Figure 3. Muskingum River Study Area

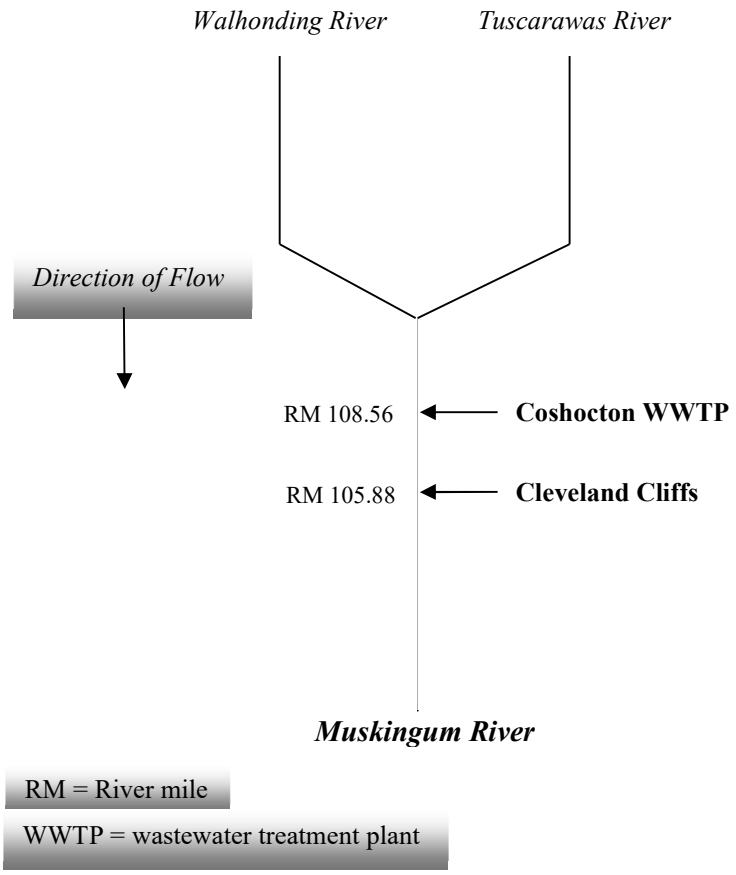

Table 1. Monitoring Stations, Wastewater Sources, Treatment Processes, Discharge Points, and Flow Rates

Station #	Wastewater Source	Treatment Utilized	Discharge/ Receiving Stream	Average Flow Rate per NPDES Application (MGD)
001	Treated process wastewaters from internal monitoring 601 and 603; treated sanitary wastewaters from internal monitoring station 602; non-contact cooling water; storm water; excess well water; and steam condensate.	See stations 601, 602, and 603 for applicable treatment.	Muskingum River	1.88
002	Stormwater from the area associated with the new vertical anneal line building.	Settling and Infiltration	Unnamed tributary to Muskingum River	(No discharge to date)
601 / 603	Salt bath descaling, acid pickling, fume scrubbers, cold rolling and alkaline cleaning, boiler blowdown, contact quench water, storm water; (601 is current designated monitoring station for treated process wastewater until such time that new vertical anneal line operations commence which will then become 603).	Chemical reduction, neutralization, chemical precipitation, flocculation, clarification, thickening, and sludge dewatering.	Directed to 001	1.52
602	Sanitary wastewaters from facility.	Activated sludge, secondary clarification, ultraviolet light disinfection.	Directed to 001	0.0031
588	Sludge removed from sanitary treatment plant.	Sludge is removed from the treatment plant and hauled to another NPDES facility.	N/A	N/A

Table 2. Effluent Flow Rates May 2018 through April 2023

Outfall	Year	# observations	Average (MGD)	Median (MGD)	95th Percentile (MGD)	Maximum (MGD)
001	2018	242	2.02	2.10	2.73	3.87
	2019	363	1.99	2.07	2.64	3.54
	2020	358	2.01	2.09	2.80	4.61
	2021	365	1.84	1.91	2.61	3.83
	2022	365	1.75	1.80	2.61	3.73
	2023	120	2.31	2.38	3.19	3.65
601	2018	237	1.63	1.67	2.14	2.66
	2019	359	1.60	1.67	2.10	2.27
	2020	355	1.63	1.72	2.21	2.91
	2021	357	1.51	1.55	2.07	2.63
	2022	354	1.44	1.46	2.08	2.64
	2023	120	1.33	1.38	1.80	2.07
602	2018	241	0.0035	0.0035	0.0060	0.0086
	2019	362	0.0036	0.0036	0.0063	0.0092
	2020	359	0.0031	0.0030	0.0056	0.0070
	2021	363	0.0031	0.0031	0.0050	0.0071
	2022	365	0.0036	0.0030	0.0059	0.1053
	2023	120	0.0029	0.0028	0.0060	0.0089

MGD = million gallons per day

Table 3. Effluent Characterization Based on Form 2C Data

Parameter	Units	Concentration	Number of samples
Ammonia	mg/L	1.57	1
Bromide	mg/L	0.283	1
Chlorine, Total Residual	mg/L	0.1	1
Phosphorous, Total	mg/L	0.22	1
Sulfate	mg/L	570	1
Barium	µg/L	53	1
Boron	µg/L	88	1
Iron	µg/L	170	1
Magnesium	mg/L	25	1
Molybdenum	µg/L	460	1
Manganese	µg/L	150	1
Titanium	µg/L	9	1
Cadmium	µg/L	0.54	1
Chromium	µg/L	44	1
Selenium	µg/L	0.5	1
Zinc	µg/L	< 4.6	1

Table 4. Effluent Characterization Using Self-Monitoring Data

Parameter	Season	Units	Current Permit Limits 30 day	Current Permit Limits Daily	# Obs.	Percentiles 50th	Percentiles 95th	Data Range
Outfall 001								
Water Temperature	Annual	C	- - - - - Monitor - - - - -		240	21.6	26.1	13.3-27.5
Residue, Total Dissolved	Annual	mg/l	- - - - - Monitor - - - - -		24	2710	3730	2170-3780
Total Suspended Solids	Annual	mg/l	- - - - - Monitor - - - - -		4	11.5	20.5	6-22
Oil and Grease, Total	Annual	mg/l	15	20	241	0	0	0-14
Nitrogen, Nitrite (NO2)[A]	Annual	mg/l	- - - - - Monitor - - - - -		240	0.49	1.05	0-2.02
Nitrogen, Nitrate (NO3)[A]	Annual	mg/l	- - - - - Monitor - - - - -		240	189	280	4.47-368
Fluoride, Total (F)	Annual	mg/l	- - - - - Monitor - - - - -		241	11.6	16	0.8-23.6
Chromium, Dissolved Hexavalent	Annual	µg/l	- - - - - Monitor - - - - -		241	0	0	0-12
Nickel, Total Recoverable	Annual	µg/l	- - - - - Monitor - - - - -		241	67	156	0-330
Zinc, Total Recoverable[B]	Annual	µg/l	- - - - - Monitor - - - - -		4	211	300	87-315
Copper, Total Recoverable	Annual	µg/l	- - - - - Monitor - - - - -		241	13	27	0-57
Flow Rate	Annual	MGD	- - - - - Monitor - - - - -		1813	2.01	2.75	0.001-4.61
Mercury, Total (Low Level)	Annual	ng/l	- - - - - Monitor - - - - -		11	0	1.13	0-1.5
pH Range Excursion, Maximum Duration	Annual	Minutes	--	60	1826	0	0	0-55
Acute Toxicity, Ceriodaphnia dubia	Annual	TUa	- - - - - Monitor - - - - -		20	0	0.05	0-1
pH, Maximum	Annual	S.U.	- - - - - Monitor - - - - -		1794	8.2	8.5	7.2-12
pH, Minimum	Annual	S.U.	- - - - - Monitor - - - - -		1794	7.8	8	2-8.2
Residue, Total Filterable	Annual	mg/l	- - - - - Monitor - - - - -		216	2770	3630	336-4580
pH Range Excursions, > 60 Minutes	Annual	Number/Day	--	0	1826	0	0	0-0
pH Range Excursions, Monthly Total Duration	Annual	Minutes	--	446	90	0	0	0-125
Sludge Monitoring Station 588								
Sludge Weight	Annual	Dry Tons	- - - - Monitor - - - - -		10	0.233	0.548	0.146-0.605
Sludge Volume, Gallons	Annual	Gals	- - - - Monitor - - - - -		10	4000	12000	3500-12000

Parameter	Season	Units	Current Permit Limits 30 day	Current Permit Limits Daily	# Obs.	Percentiles 50th	Percentiles 95th	Data Range
Internal Monitoring Station 601								
pH	Annual	S.U.	- - - - - Monitor - - - - -		240	8.57	8.99	7.8-9.3
Total Suspended Solids	Annual	mg/l	- - - - - Monitor - - - - -		240	4.4	12.1	0-18
Total Suspended Solids	Annual	kg/day	295	689	240	27	83.8	0-116
Oil and Grease, Total	Annual	mg/l	- - - - - Monitor - - - - -		240	0	0	0-0
Oil and Grease, Total	Annual	kg/day	77	232	240	0	0	0-0
Chromium, Dissolved Hexavalent	Annual	µg/l	- - - - - Monitor - - - - -		241	0	0	0-18
Chromium, Dissolved Hexavalent	Annual	kg/day	--	0.22	241	0	0	0-0.127
Chromium, Total (Cr)	Annual	µg/l	- - - - - Monitor - - - - -		241	26	50	0-130
Chromium, Total (Cr)	Annual	kg/day	3.89	9.73	241	0.172	0.354	0-0.79
Nickel, Total (Ni)	Annual	µg/l	- - - - - Monitor - - - - -		241	86	193	20-410
Nickel, Total (Ni)	Annual	kg/day	2.92	8.75	241	0.554	1.41	0.111-2.82
Copper, Total Recoverable	Annual	µg/l	- - - - - Monitor - - - - -		241	15	33	0-92
Copper, Total Recoverable	Annual	kg/day	- - - - - Monitor - - - - -		241	0.101	0.227	0-0.634
Flow Rate	Annual	MGD	- - - - - Monitor - - - - -		1782	1.6	2.12	0.24-2.91
Internal Monitoring Station 602								
Flow Rate	Annual	GPD			1810	3210	5770	0-105000
pH	Annual	S.U.			60	7.1	7.36	6.6-7.61
Total Suspended Solids	Annual	mg/l	30	45	60	7	20.1	0-29
Nitrogen, Ammonia (NH3)	Annual	mg/l			60	0.07	15.8	0-85.8
Fecal Coliform	Annual	#/100 ml	1000	2000	30	7.5	111	0-312
CBOD 5 day	Annual	mg/l	25	40	60	0	13.1	0-20

[A]Nitrate and Nitrate values were added together for use in determining Projected Effluent Quality values.

[B]Zinc - self- monitoring data for zinc was associated with storm water grab sampling intended to assess first flush conditions in lieu of composite samples meant for determining projected effluent quality values. Therefore, the four self-monitoring data points were removed from consideration for determining projected effluent quality values.

Table 5. Projected Effluent Quality

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Self-Monitoring (DMR) Data [A]					
Ammonia-N (Summer)	mg/L	0	0	--	--
Chromium, Dissolved Hexavalent	µg/L	241	5	6.132	8.4
Copper - TR	µg/L	241	158	21.79	30.21
Fluoride	mg/L	239	239	14.11	16.65
Mercury - TR (BCC)	ng/L	11	4	1.862	2.55
Nickel - TR	µg/L	241	238	135.7	197
Nitrogen, Nitrite[C]	mg/L	240	239	0.845	1.18
Nitrogen, Nitrate[C]	mg/L	240	222	246.4	309.5
Nitrate-N + Nitrite-N[C]	mg/L	--	--	247.2	310.7
Total Filterable Residue	mg/L	239	239	3280	3796
Combined Other Data [B]					
Ammonia-N (Winter)	mg/L	1	1	7.106	9.734
Barium	µg/L	1	1	240	329
Cadmium - TR	µg/L	1	1	2.444	3.348
Chlorine – Total Residual	mg/L	1	1	0.453	0.62
Chromium - TR	µg/L	1	1	199.1	272.8
Iron - TR	µg/L	1	1	769	1054
Magnesium	mg/L	1	1	113	155
Manganese - TR	µg/L	1	1	679	930
Molybdenum	µg/L	1	1	2082	2852
Phosphorus	mg/L	1	1	0.996	1.364
Selenium - TR	µg/L	1	1	2.263	3.1
Sulfates	mg/L	1	1	2580	3534
Titanium	µg/L	1	1	40.73	55.8
Zinc - TR	µg/L	1	0	--	--

[A] = DMR data combined with Ohio EPA and/or Form 2.C Application data
[B] = Combined other data sources include Form 2.C and Ohio EPA data
[C] = Nitrate and Nitrate values were added together for use in determining Projected Effluent Quality values.
DMR = Discharge Monitoring Report
MDL = analytical laboratory method detection limit
PEQ = projected effluent quality
TR = total recoverable

Table 6. Summary of Acute Toxicity Results

	Ceriodaphnia Dubia
Date	TU_a
5/9/2018	AA
8/6/2018	AA
11/6/2018	AA
2/5/2019	AA
5/8/2019	AA
8/14/2019	AA
11/6/2019	AA
2/4/2020	AA
5/6/2020	1.0
8/5/2020	AA
11/4/2020	AA
2/2/2021	AA
5/4/2021	AA
8/3/2021	AA
11/2/2021	AA
2/1/2022	AA
5/3/2022	AA
8/22/2022	AA
11/8/2022	AA
2/7/2023	AA

AA = non-detection; analytical method detection limit of 0.2 TU_a
TU_a = acute toxicity unit

Table 7. Use Attainment Table for the Muskingum River Study Area

Location	Year(s)	River Mile	AL Use Designation	Attainment Status	Causes of Impairment	Sources of Impairment
Tuscarawas River SW of Canal Lewisville	2005	3.0	EWH	FULL	N/A	N/A
Tuscarawas River at Coshocton @ Kia Bridge	2005	0.3	EWH	FULL	N/A	N/A
Muskingum River Downstream Walhonding River/Tuscarawas River .	2006	110.7	WWH	FULL	N/A	N/A
Muskingum River 1.0 Mile Downstream Coshocton WWTP	2006	107.6	WWH	FULL	N/A	N/A
Muskingum River 1.5 Mile NE of Conesville @ Twp. Rd. 1182	2006	105.0	WWH	FULL	N/A	N/A
Muskingum River 1.5 Mile Upstream. Wills Creek	2006	101.8	WWH	FULL	N/A	N/A

EWH = Exceptional Warmwater Habitat
WWH = Warmwater Habitat
WWTP = Wastewater Treatment Plant

Table 8. Water Quality Criteria in the Study Area

		Outside Mixing Zone Criteria				Inside
		Average			Maximum	Mixing
Parameter	Units	Human Health	Agri-culture	Aquatic Life	Aquatic Life	Zone Maximum
Ammonia-N (Summer)	mg/L	--	--	0.8	--	--
Ammonia-N (Winter)	mg/L	--	--	2.6	--	--
Barium	µg/L	--	--	1500	6400	13000
Cadmium - TR	µg/L	--	50	5.3	14	27
Chlorine, Total Residual	mg/L	--	--	0.011	0.019	0.038
Chromium - TR	µg/L	--	100	190	4000	8000
Chromium, Dissolved Hexavalent	µg/L	--	--	11	16	31
Copper - TR	µg/L	--	500	21	35	70
Fluoride	mg/L	--	2	--	--	--
Iron - TR	µg/L	--	5000	--	--	--
Magnesium	mg/L	--	--	--	--	--
Manganese - TR	µg/L	--	--	--	--	--
Mercury - TR (BCC) [A]	ng/L	12	10000	910	1700	3400
Molybdenum	µg/L	--	--	20000	190000	370000
Nickel - TR	µg/L	4600	200	120	1100	2100
Nitrate-N + Nitrite-N	mg/L	--	100	--	--	--
Phosphorus	mg/L	--	--	--	--	--
Selenium - TR	µg/L	4200	50	5	62	120
Sulfates	mg/L	--	--	--	--	--
Titanium	µg/L	--	--	--	--	--
Total Filterable Residue	mg/L	--	--	1500	--	--
Zinc - TR	µg/L	26000	25000	270	270	550

[A] = Bioaccumulative Chemical of Concern (BCC)
TR = total recoverable

Table 9. Instream Conditions and Discharger Flow

Parameter	Units		Value	Basis
Upstream Flows				
Muskingum River				
7Q10	cfs	annual	544	Combined USGS gages [B], 1921-2023 data
1Q10	cfs	annual	385	Combined USGS gages [B], 1921-2023 data
30Q10	cfs	summer	630	Combined USGS gages [B], 1921-2023 data
		winter	1093	Combined USGS gages [B], 1921-2023 data
Harmonic Mean Flow	cfs	annual	2033	Combined USGS gages [B], 1921-2023 data
Mixing Assumption	%	average	100	Stream-to-discharge ratio
	%	max	100	Stream-to-discharge ratio
Instream Hardness	mg/L	annual	264	Combined EA3[A]; 18 values, 2015-20
Instream pH	S.U.	summer	8.11	Combined EA3[A]; 16 values, 2015-20
		winter	8.13	Combined EA3[A]; 5 values, 2015-20
Instream Temperature	ºC	summer	24.2	Combined EA3[A]; 17 values, 2015-20
		winter	6.69	Combined EA3[A]; 4 values, 2015-20
Discharge Flows				
Coshocton WWTP 001	cfs(MGD)	design	6.81 (4.4)	Average Daily Design Flow
Cleveland Cliffs 001	cfs(MGD)	95th %	4.18 (2.7)	95th% of values May 2018-April 2023
Background Water Quality				
Ammonia-N (Summer)	mg/L	annual	0.077	MOR 801; 7 values, 2<MDL, 2006-08
Ammonia-N (Winter)	mg/L	annual	0.098	MOR 801; 8 values, 1<MDL, 2006-08
Antimony	µg/L	annual	0	No representative data available.
Arsenic - TR	µg/L	annual	2.19	EA3, 7 values, 0 <MDL, 2006-15
Barium	µg/L	annual	56.3	EA3, 7 values, 0 <MDL, 2006-15
Beryllium	µg/L	annual	0	No representative data available.
Bis(2-ethylhexyl) phthalate	µg/L	annual	0	No representative data available.
Butyl benzyl phthalate	µg/L	annual	0	No representative data available.
Cadmium - TR	µg/L	annual	0.1	EA3, 7 values, 0 <MDL, 2006-15
Chlorine	mg/L	annual	0	No representative data available.
Chromium - TR	µg/L	annual	1	EA3, 7 values, 0 <MDL, 2006-15
Chromium, Dissolved Hexavalent	µg/L	annual	0	No representative data available.
Copper - TR	µg/L	annual	1	EA3, 7 values, 0 <MDL, 2006-15
Cyanide - free	µg/L	annual	0	No representative data available.
Fluoride	mg/L	annual	0	No representative data available.

Parameter	Units		Value	Basis
Iron - TR	µg/L	annual	1642	EA3, 7 values, 0 <MDL, 2006-15
Lead - TR	µg/L	annual	1.99	EA3, 7 values, 0 <MDL, 2006-15
Molybdenum	µg/L	annual	0	No representative data available.
Nickel - TR	µg/L	annual	1.31	EA3, 7 values, 0 <MDL, 2006-15
Nitrate-N + Nitrite-N	mg/L	annual	1.91	EA3, 7 values, 0 <MDL, 2006-15
Selenium - TR	µg/L	annual	1	EA3, 7 values, 0 <MDL, 2006-15
Silver	µg/L	annual	0	No representative data available.
Strontium	µg/L	annual	228	EA3, 7 values, 0 <MDL, 2006-15
Thallium	µg/L	annual	0	No representative data available.
Total Filterable Residue	mg/L	annual	396	EA3, 7 values, 0 <MDL, 2006-15
Zinc - TR	µg/L	annual	12.29	EA3, 7 values, 0 <MDL, 2006-15

USGS = United States Geological Survey
WWTP = Wastewater treatment plant
[A] Stations R11W03, 611740 and 601810
[B] Stations 03129000 and 03138500
MOR = Monthly Operating Report (Coshocton WWTP)
DSW = Ohio EPA Division of Surface Water
MGD = million gallons per day
NPDES = National Pollutant Discharge Elimination System
EA3 = Ohio EPA Ecological Assessment and Analysis Application – Station R11W01

Table 10. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

		Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum	
Parameter	Units	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia-N (Summer)	mg/L	--	--	38.5	--	--
Ammonia-N (Winter)	mg/L	--	--	229	--	--
Barium [B]	µg/L	--	--	66549 [A]	208409 [A]	13000
Cadmium - TR [B]	µg/L	--	8446 [A]	240 [A]	457 [A]	27
Chlorine, Total Residual	mg/L	--	--	1.416 [A]	1.735 [A]	0.038
Chromium - TR [B]	µg/L	--	16757 [A]	8706	131345 [A]	8000
Chromium, Dissolved Hexavalent [B]	µg/L	--	--	507	526 [A]	31
Copper - TR	µg/L	--	84457 [A]	922 [A]	1118 [A]	70
Fluoride	mg/L	--	956	--	--	--
Iron - TR	µg/L	--	569987	--	--	--
Mercury – TR [C]	ng/L	12	10000 [A]	910	1700	3400
Molybdenum	µg/L	--	--	2580000 [A]	17400000 [A]	370000
Nickel - TR [B]	µg/L	778334 [A]	33630 [A]	5468 [A]	36087 [A]	2100
Nitrate-N + Nitrite-N	mg/L	--	16604	--	--	--
Selenium - TR	µg/L	710686 [A]	8294 [A]	185 [A]	2004 [A]	120
Total Filterable Residue	mg/L	--	--	51243	--	--
Zinc - TR	µg/L	4400000 [A]	4230000 [A]	11881 [A]	8476 [A]	550

[A] Allocation must not exceed the Inside Mixing Zone Maximum
[B] Parameter would not require a WLA based on reasonable potential procedures, but allocation requested by Permits Group.
[C] Bioaccumulative Chemical of Concern (BCC), WQS must be met at end-of-pipe.

Table 11. Parameter Assessment

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

Magnesium	Manganese - TR
Sulfates	Titanium

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

Ammonia (S&W)	Barium	Iron - TR
Mercury - TR (BCC)	Molybdenum	Zinc - TR

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

Cadmium - TR	Chromium - TR	Chromium, Dissolved Hexavalent
Copper - TR	Fluoride	Nickel - TR
Nitrate-N + Nitrite-N	Selenium - TR	Total Filterable Residue

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

No parameters meet the criteria of this group.

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
Chlorine – Total Residual	mg/L		--	0.038

PEL = preliminary effluent limit
PEQ = projected effluent quality
WLA = wasteload allocation
WQS = water quality standard

Table 12. Final Effluent Limits

Parameter	Units	Concentration 30 Day Average	Concentration Daily Maximum	Loading (kg/day)[a] 30 Day Average	Loading (kg/day)[a] Daily Maximum	Basis[b]
Outfall 001						
Water Temperature	°C		- - - - Monitor - - - -			M[e]
Total Suspended Solids	mg/L		- - - - Monitor - - - -			M[e]
Oil & Grease	mg/L		- - - - Monitor - - - -			M[e]
Nitrite Plus Nitrate, Total	mg/L		- - - - Monitor - - - -			M[e]
Fluoride, Total (F)	mg/L		- - - - Monitor - - - -			M[e]
Chromium, Hexavalent Dissolved	µg/L		- - - - Monitor - - - -			M[e]
Nickel, Total Recoverable	µg/L		- - - - Monitor - - - -			M[e]
Zinc, Total Recoverable	µg/L		- - - - Monitor - - - -			M[e]
Copper, Total Recoverable	µg/L		- - - - Monitor - - - -			M[e]
Oxidants, Total Residual	mg/L	--	0.0048	--	--	BTJ
Flow Rate	MGD		- - - - Monitor - - - -			M[e]
Mercury, Total (Low Level)	ng/L		- - - - Monitor - - - -			M[e]
Acute Toxicity, Ceriodaphnia dubia	TUa		- - - - Monitor - - - -			M[e]
pH, Maximum	S.U.		- - - - Monitor - - - -			WQS[d]
pH, Minimum	S.U.		- - - - Monitor - - - -			WQS[d]
Residue, Total Filterable	mg/L		- - - - Monitor - - - -			M[e]
pH Range Excursions, > 60 Minutes	Number/Day	--	0	--	--	WQS[d]
pH Range Excursions, Monthly Total Minutes	Minutes	--	446	--	--	WQS[d]
Outfall 002						
Total Suspended Solids	mg/L		- - - - Monitor - - - -			M[e]
Zinc, Total Recoverable	µg/L		- - - - Monitor - - - -			M[e]
Sludge Monitoring Station 588						
Sludge Weight	Dry Tons		- - - - Monitor - - - -			M[e]
Sludge Volume	Gallons		- - - - Monitor - - - -			M[e]
Internal Monitoring Station 601						
pH	S.U.		- - - - Monitor - - - -			M[e]
Total Suspended Solids	mg/L	--	--	295	689	BCT
Oil & Grease	mg/L	--	--	77	232	BCT
Chromium, Hexavalent Dissolved	µg/L	--	--	--	0.22	BTJ
Chromium	µg/L	--	--	3.89	9.73	BAT
Nickel	µg/L	--	--	2.92	8.75	BAT
Copper	µg/L		- - - - Monitor - - - -			M[e]

Parameter	Units	Concentration 30 Day Average	Concentration Daily Maximum	Loading (kg/day)[a] 30 Day Average	Loading (kg/day)[a] Daily Maximum	Basis[b]
Flow Rate	MGD		- - - - Monitor - - - -			M[c]
Internal Monitoring Station 602						
Flow Rate	GPD		- - - - Monitor - - - -			M[c]
pH	S.U.		- - - - Monitor - - - -			M[c]
Total Suspended Solids	mg/L	30	45	--	--	BPT
Fecal Coliform - Summer	#/100 mL	1000	2000	--	--	WQS
Carbonaceous Biological Oxygen Demand 5-Day	MGD	25	40	--	--	BPT
Internal Monitoring Station 603						
pH	S.U.		- - - - Monitor - - - -			M[c]
Total Suspended Solids	mg/L	--	--	256	597	BCT
Oil & Grease	mg/L	--	--	77	232	BCT
Chromium, Hexavalent Dissolved	µg/L	--	--	--	0.22	BTJ
Chromium	µg/L	--	--	3.36	8.44	BAT
Nickel	µg/L	--	--	2.53	7.55	BAT
Copper	µg/L		- - - - Monitor - - - -			M[c]
Flow Rate	MGD		- - - - Monitor - - - -			M[c]

[a] Loadings for 601 and 603 are summarized in Attachment 1.

[b] Definitions:

BAT = Best Available Technology Economically Achievable, 40 CFR Part 420, Subpart H - Salt Bath Descaling, Subpart I – Acid Pickling, Subpart J – Cold Forming.

BCT = Best Conventional Pollutant Control Technology, 40 CFR Part 420, Subpart H - Salt Bath Descaling, Subpart I – Acid Pickling, Subpart J – Cold Forming, Subpart K – Alkaline Cleaning.

BPT = Best Practicable Waste Treatment Technology, 40 CFR Part 133, Secondary Treatment Regulation

BTJ = Best Technical Judgment

M = Division of Surface Water NPDES Permit Guidance 2: Determination of Sampling Frequency Formula for Industrial Waste Discharges

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] pH Effluent limitations under continuous monitoring pursuant 40 CFR 401.17. The acceptable pH range is 6.5 to 9.0 as established by Ohio Water Quality Standards.

[e] Total Suspended Solids and Zinc monitoring and benchmarks are proposed at outfalls 001 and 002. Benchmark and monitoring for total suspended solids is provided as a substitute parameter in lieu of aluminum as referenced under industrial activities subsector F1 in General Permit number OHR000007.

Attachment 1. Applicable Federal Effluent Limitation Guidelines

Cleveland Cliffs Steel Corporation - Coshocton Works - Technology-Based Effluent Limitations "Internal Station 603"

	Production	Applicable ELG		Total Suspended Solids		Oil & Grease		Total Chromium		Nickel		Naphthalene	TCE
Operation	tons/day	(40 CFR 420)	Units	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Daily Max
Salt Bath Descaling	478	82(a)(4)/83(a)(4)	lbs/1000lbs	0.0964	0.0413	--	--	0.00138	0.000551	0.00124	0.000413	--	--
Oxidizing - Cont.			lbs/day	92.2	39.5			1.32	0.527	1.19	0.395		
Acid Pickling	1052	92(c)(3)/93(c)(3)	lbs/1000lbs	0.438	0.188	0.188	0.0626	0.00626	0.00250	0.00563	0.00188	--	--
Combination			lbs/day	922	396	396	132	13.2	5.26	11.8	3.96		
Cold Rolling	922	102(a)(1)/(103(a)(1)	lbs/1000lbs	0.00125	0.000626	0.000522	0.000209	2.09E-05	0.0000084	1.88E-05	0.0000063	0.0000021	3.1E-06
Single Stand Recirc.			lbs/day	2.31	1.15	0.963	0.385	0.0385	0.015	0.0347	0.012	0.0039	0.0057
Alkaline Cleaning, BPT	46	112(b)	lbs/1000lbs	0.102	0.0438	0.0438	0.0146	--	--	--	--	--	--
Continuous			lbs/day	9.38	4.03	4.03	1.34						
Alkaline Cleaning, NSPS	240	114(a)	lbs/1000lbs	0.0146	0.00626	0.00626	0.00209	--	--	--	--	--	--
			lbs/day	7.01	3.00	3.00	1.00						
Acid Pickling (comb)	11	92(c)(6)/93(c)(6)	kg/unit/day	5.72	2.45	2.45	0.819	0.0819	0.0327	0.0735	0.0245	--	--
Fume Scrubbers			lbs/day	139	59.4	59.4	19.9	1.99	0.793	1.78	0.594		
Non-categorical flows	0.246	420.08	mg/l	70	30	30	10	1.0	0.4	0.9	0.3	--	--
MGD			lbs/day	144	61.5	61.5	20.5	2.05	0.821	1.85	0.615		
Total			lbs/day	1315.90	564.58	524.893	175.125	18.5985	7.416	16.6547	5.576	0.0039	0.0057
			kg/day	597	256	238	79.4	8.44	3.36	7.55	2.53	0.002	0.003
		Current 601 limits	kg/day	689	295	232	77	9.73	3.89	8.75	2.92	0.002	0.003
			% Change	-13.4%	-13.2%	2.6%	3.1%	-13.3%	-13.6%	-13.7%	-13.4%	0.0%	0.0%
		Proposed 603 limits	**kg/day**	**597**	**256**	**232**	**77**	**8.44**	**3.36**	**7.55**	**2.53**	**0.002**	**0.003**

No additional loadings were requested with the modificaiton, thus Oil & Grease limits will remain at the previously permitted 232 kg/day Daily and 77 kg/day Monthly limits.

A monitoring waiver is proposed to continue for napthalene and tetrachloroethylene pusuant 40 CFR 122.44(a)(2)

The currently permitted Daily limitation of 0.22 kg/day hexavalent chromium is proposed to continue into the 603 monitoring table under previous justification.

Attachment 2. List of Approved Boiler/Cooling Water System Additives

Water Treatment Additives
Supplier and Product Name
ChemTreat P817E
ChemTreat B120
ChemTreat CL4386
ChemTreat P810
ChemTreat FO120
ChemTreat CL16
ChemTreat BL1342
ChemTreat CT709
ChemTreat CL1352
ChemTreat CL4850
ChemTreat CT236
ChemTreat CL236
ChemTreat CL206
ChemTreat BL1343
ChemTreat CL2427

Attachment 3. Whole Effluent Toxicity Reasonable Potential Analysis

The reasonable potential analyses in Table A is performed for *Ceriodaphnia dubia* acute (TUa Cd). The facility historically had a presence of *Ceriodaphnia dubia* acute toxicity in the effluent identified by OEPA compliance sampling where limits were subsequently imposed in the permit. Since that time the facility was able to identify the source of the toxicity, adjust treatment operations, and eliminate acute toxicity leading to the removal of the limitation. Continued monitoring was prescribed in the previous permit to assess whether the toxicity returns. Tables B and C are not used as there were no recent near-field or far-field toxicity tests performed during the review period.

Hazard Category Summary

	Ceriodaphnia dubia		***Pimephales promelas***	
	Acute	**Chronic**	**Acute**	**Chronic**
Effluent Toxicity (Table A)	4	N/A	N/A	N/A
Near-Field Impact (Table B)	N/A	N/A	N/A	N/A
Far-field Impact (Table C)	N/A	N/A	N/A	N/A
	4		N/A	

Hazard Categories: 1: Toxicity adequately documented 3: Toxicity possible
2: Toxicity strongly suspected 4: No toxicity

Table A. Effluent Toxicity

	Ceriodaphnia dubia		***Pimephales promelas***	
	Acute	**Chronic**	**Acute**	**Chronic**
WLA	1.0			
# of tests	20			
Maximum value	1.0			
Percent of tests >WLA	0			
Geometric mean	0.11*			
Average Exceedance (Geomean * Percent of tests >WLA)	0			
Average Exceedance / WLA	0			

(*) Geometric mean was calculated using 0.5 times the Method Detection Limit (MDL) for samples reported at less than MDL.

Attribute Evaluated	**Hazard Category 1**	**Hazard Category 2**	**Hazard Category 3**	**Hazard Category 4**
Degree of Toxicity	Adequately Documented	Strongly Suspected	Possible	None
(1) Minimum number of tests (Where values are reported) >MDL	3	1	0 or 1 TUa Cd	0 or 1 TUa Cd
(2) Percent of tests >WLA	>30	20 to 30	10 to 20	< 10 TUa Cd
(3) Average Exceedance/WLA[1] (Tables B and C data not available)				
(a) Acute[2]	> 0.3	≥ 0.3	≥ 0.2	< 0.2 TUa Cd
(4) Maximum TU value (Tables 3B and 3C data not available)	≥(3xWLA)	≥WLA	≥WLA TUa Cd	<WLA

Table B. Near-Field Toxicity – Not Used

Attribute Evaluated	Hazard Category 1	Hazard Category 2	Hazard Category 3	Hazard Category 4
Degree of Toxicity	Adequately Documented	Strongly Suspected	Possible	None
(1) Mortality within mixing zone[3]	≥ 20%	≤ 20%	≤ 20%	< 20%
(2) Stream community impact				
(a) implied chemically[4, 6]	≥3xIMZM or >LC50	≥1.5xIMZM or >LC50	≥0.75xIMZM or >0.75xLC50	≤0.5xIMZM or ≤0.75xLC50
(b) implied toxicologically[4]	≥1.0 TUa	≥1.0 TUa	≥1.0 TUa	<1.0 TUa
(c) implied biologically	Toxic	Fair/poor community	Slight impact	None
				TUa

Table C. Far-Field Toxicity – Not Used

Attribute Evaluated	Hazard Category 1	Hazard Category 2	Hazard Category 3	Hazard Category 4
Degree of Toxicity	Adequately Documented	Strongly Suspected	Possible	None
(1) Aquatic life use impairment (Ohio EPA biological criteria)	Yes[5]	Yes or partial[5]	Partial	None
(2) Stream community impact implied toxicologically[3]	Significant effect	Significant effect	Unknown or slight effect	None
(3) Other indicators	Stress indicated	Stress indicated	Stress indicated	No stress

[1] Compare (per cent exceedances x geometric mean TU) to table factor.
[2] Use 0.3 x WLA for situations where AIM exists.
[3] Results of ambient toxicity test are not binding or required for classification as to category but, if available, will be interpreted under the weight of evidence principle giving due consideration as to sampling location and conditions.
[4] Based on effluent data. May not be appropriate for situations where AIM exists.
[5] Lack of attainment due to toxic, complex or unidentifiable type of impact.
[6] The LC50-based criteria are used only for pollutant parameters that do not have numeric criteria.

Addendum 1. Acronyms

ABS	Anti-backsliding
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BPJ	Best professional judgment
BPT	Best Practicable Control Technology Currently Available
BTJ	Best technical judgment
CFR	Code of Federal Regulations
CONSWLA	Conservative substance wasteload allocation
CWA	Clean Water Act
CWIS	Cooling water intake structure
DMR	Discharge Monitoring Report
DMT	Dissolved metal translator
ELG	Federal effluent limitation guideline
gpm	Gallons per minute
IMZM	Inside mixing zone maximum
MDL	Analytical method detection limit
MGD	Million gallons per day
NPDES	National Pollutant Discharge Elimination System
NSPS	New source performance standards
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
SIC	Standard Industrial Classification
TBEL	Technology-based effluent limit
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
WQBEL	Water-quality-based effluent limit
WQS	Water Quality Standards