AR-14

National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit To Discharge to Waters of the State of Ohio
for **ArcelorMittal Cleveland Inc.**

Public Notice No.: 08-02-012
Public Notice Date: February 5, 2008
Comment Period Ends: March 7, 2008

OEPA Permit No.: **3ID00003*OD**
Application No.: **OH0000957**

Name and Address of Applicant:

ArcelorMittal Cleveland
3060 Eggers Avenue
Cleveland, Ohio 44105

Name and Address of Facility Where Discharge Occurs:

ArcelorMittal Cleveland
3060 Eggers Avenue
Cleveland, Ohio 44105
Cuyahoga County

Receiving Water: **Cuyahoga River**

Subsequent Stream Network: **Lake Erie**

Introduction

Development of a Fact Sheet for NPDES permits is required 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 and other treatment-technology based standards, existing effluent quality, instream biological, chemical and physical conditions, and the allocations of pollutants to meet Ohio Water Quality Standards. 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

Effluent limits for the final outfalls and internal monitoring stations are very similar to the current limits. Significant changes include new selenium limits for outfall 022, based on reasonable potential to exceed WQS. Current limits for dissolved solids at outfall 002 and zinc at outfall 023 would be removed because these discharges no longer have reasonable potential to contribute to WQS exceedances.

Ohio EPA has recommended renewal of the 301(g) variance limits for ammonia at internal monitoring station 604. Section 301(g) of the Clean Water Act allow variances from BAT treatment technology standards for ammonia and certain other pollutants if the discharge can meet BPT treatment standards and water quality-based effluent conditions. USEPA's public notice on approval of this variance will be concurrent with the public notice of this draft permit.

Monitoring requirements for low-level mercury have been included for outfalls 604/005, 017 and 622/022. Ohio EPA has been reviewing industrial discharges likely to contain mercury, and has identified primary industry processes, such as blast furnaces, and process that use steel scrap, such as steel making, as probable sources of mercury. Steel scrap may contain mercury because of the presence of automotive mercury switches in reclaimed steel.

Acute toxicity limits would be continued at outfall 002 in this renewal. The review of the effluent data under the federal Great Lakes Initiative rule indicates that this limit is still needed. Monitoring requirements would continue at outfalls 005 and 022.

Several changes to monitoring conditions at the final discharge points have been drafted in this permit renewal. Parameters were added or removed based on new effluent data and wasteload allocation results.

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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.

Location of Discharge/Receiving Water Use Classification

ArcelorMittal Cleveland discharges to the Cuyahoga River at various points between River Mile (RM) 7.0 and RM 4.7. The approximate location of the facility is shown in Figure 1. Specific River Miles for each discharge are shown in Figure 2.

This segment of the Cuyahoga River is described by Ohio EPA River Code: 19-001, USEPA River Reach #: 04110002-001, County: Cuyahoga, Ecoregion: Erie-Ontario Lake Plain. The Cuyahoga River is presently designated for the following uses: For RMs 7.0 to 5.6, the Cuyahoga River is designated Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Primary Contact Recreation (PCR). For RMs 5.6 to 0.0 (the Cuyahoga Ship Channel), the Cuyahoga River is designated Limited Resource Water (LRW - navigation maintenance) during the months of June through January, and any remaining months when the river flow at the USGS stream gage at Independence (RM 13.0) is less than 703 cubic feet per second (CFS). During the months of February through May, whenever the river flow at the Independence gage is greater than or equal to 703 cfs, the aquatic life use is Fish Passage (FP). Other designated uses that apply to the Cuyahoga Ship Channel are Industrial Water Supply (IWS) and 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.

The lower Cuyahoga River study area is shown in Figure 2.

Facility Description

ArcelorMittal Steel owns and operates integrated steel manufacturing facilities in Cleveland (w/o cokemaking). The facilities consist of two blast furnaces for the production of iron, two basic oxygen furnaces for the production of steel, and continuous casting and steel finishing processes. Facilities produce cast, cold-rolled and zinc plated flat rolled products.

The process operations performed at this facility are classified by the Standard Industrial Classification (SIC) codes 3312, "Steel Works, Blast Furnace, Rolling" . Discharges resulting from process operations are therefore subject to Federal Effluent Guideline Limitations, contained in Chapter 40 of the Code of Federal Regulations, Part 420, "Iron and Steel Manufacturing" and Part 433, "Metal Finishing" Industrial Categories. Appendix _ of this fact sheet contains all of the effluent guideline calculations.

Description of Existing Discharge

Table 1 provides a summary of the wastewater sources and treatment used for each of ArcelorMittal's outfalls. The draft permit contains monitoring and limits at several internal monitoring stations. Effluent guideline limits are applied at these stations to ensure that these treatment standards are met prior to combining with other wastestreams. If monitoring were not done at these locations, it would not be possible to verify compliance with federal effluent guideline standards due to dilution. Federal rules [40 CFR 125.3(f)] prohibit attaining these standards by dilution.

Descriptions of the process outfalls:

Outfall 002 receives treated wastewater from outfalls 601 and 602, as well as storm water and groundwater. The following categorical wastestreams are treated at these outfalls: 84" Hydrochloric Acid Pickling (with fume scrubber), 84" Cold Rolling Tandem Mill, 84" Cold Rolling Temper Mill (all Iron&Steel categorical discharges) plus the AK/ArcelorMittal Electrogalvanizing Line (Metal Finishing categorical discharge). Outfalls 601 and 602 are monitored by ArcelorMittal; the sum pollutant loadings from these outfalls are reported under outfall 603, which contains the limits for these process discharges.

Outfall 005 contains process and non-contact cooling water from the C5 and C6 Blast Furnaces. The process wastewater is treated before being sent to the cooling tower for recycling. Blowdown from the cooling tower is monitored as outfall 604. Outfall 604 makes up approximately 0.4% of the outfall 005 flow. Outfall 005 also contains storm water, ground water, and combined sewer overflows from the Northeast Ohio Regional Sewer District (NEORSD).

Outfall 017 represents treated categorical process effluent from the Number 1 Basic Oxygen Furnace, vacuum degassing and continuous casting processes. Under extreme storm conditions partially treated wastewaters from these processes can bypass directly to the Cuyahoga River via outfall 011.

Outfall 022 contains the process water from the West Side steelmaking plants (#2 BOF, continuous casting), which is monitored at outfall 622. In addition to outfall 622 discharges, outfall 022 contains storm runoff and groundwater.

Outfall 023 contains storm water, ground water, and potentially leachate from the slag landfill area. Individual ponds in this area are monitored as outfalls 613, 633, 643 and 653. All of these ponds discharge via outfall 023.

Table 1. Description of Existing Discharges

Outfall Number	Sources to Outfall	Treatment of Discharge
001	Non-contact cooling water, ground water, storm runoff	None
002	601, 602, non-contact cooling water, ground water, storm runoff	601: grit removal, mixing, chemical precipitation, coagulation, flocculation, settling, rapid sand filters 602: grit removal, settling, mixing, chemical precipitation, coagulation, flocculation, flotation
004	Non-contact cooling water, ground water, storm runoff, steam condensate, emergency sanitary overflow	None
005	604, non-contact cooling water, ground water, storm runoff, emergency sanitary overflow	604: grit removal, chemical precipitation, coagulation, flocculation, settling NCCW: chlorination, de-chlorination
011	Ground water, storm runoff, steel plant emergency overflow	Overflow may be partially treated – see outfall 017 treatment
014	Non-contact cooling water, ground water, storm water, emergency sanitary overflow	NCCW: chlorination, de-chlorination
017	East side steel plant filter blowdown, continuous caser, vacuum degassing, BOR blowdown, ground water, storm runoff	Grit removal, screening, mixing, flocculation, settling, rapid sand filtration, chlorination
021	Ground water, storm runoff, process overflows not discharged via 622	None
022	622, non-contact cooling water, ground water, storm runoff	622: grit removal, mixing, flocculation, settling, coagulation, neutralization, chemical precipitation, chlorination, de-chlorination
023	613, 633, 643, 653, storm runoff, ground water	Settling
024	Non-contact cooling water, ground water, storm runoff	None

Tables 2-8 present summaries of analytical results for ArcelorMittal's effluent samples compiled from the NPDES application, and from bioassay tests done by Ohio EPA. The monthly average PEQ_{avg} and daily maximum PEQ_{max} decision criteria are also included on thes tables.

Tables 9-24 present summaries of unaltered monthly operation report data for the period January 2002 to December 2006 for the ArcelorMittal Cleveland as well as current permit limits, and monthly average PEQ_{avg} and daily maximum PEQ_{max} values.

Tables 25-27 present results from acute bioassay tests conducted on outfalls 002, 005 and 022, respectively. Pimephales promelas (fathead minnows), and Ceriodaphnia dubia (water flea) were the test organisms.

Receiving Water Quality / Environmental Hazard Assessment

An assessment of the impact of a permitted point source on the immediate receiving waters includes an evaluation of the available chemical/physical[1], biological[2], 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 (Mlwb), 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.

[1] water column, effluent, and sediment chemistry, flows
[2] fish and macroinvertebrate assemblages

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 (see Table 28) 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.

Cuyahoga River Lacustuary - Big Creek to Lake Erie
This section of the river contains the Cuyahoga River navigation channel which, because of the characteristics of the channel has its own unique use designation. The aquatic life use designation for the navigation channel is either limited resource water - navigation maintenance or fish passage based upon the season and/or flow in the river. Ohio EPA sampling indicates that adult fish are able to utilize the navigation channel for passage upstream to suitable habitat to continue their life cycles. Recent studies by the Cuyahoga River RAP, indicate significant die-off of larval fish in the navigation channel. It is unclear whether this larval fish die off is significantly greater in the Cuyahoga River channel than in other Lake Erie tributaries. In the navigation channel, cumulative loadings and flows from the 21 ArcelorMittal (formerly LTV) outfalls make it one of the largest point source discharges in the Cuyahoga River basin. However, few WWH chemical WQS exceedences were detected near the plant.

Other potential steel plant impacts were generally masked by conditions upstream and the poor habitat and water quality in the navigation channel. Poor and very poor biological communities coincide with the lack of suitable habitat, low dissolved oxygen, and chronically elevated ammonia and zinc levels between ArcelorMittal and Lake Erie. While ArcelorMittal appears to be a major source of zinc loadings, anaerobic decomposition of organic compounds in sediments may contribute to elevated ammonia-N levels. Under summer pH and temperature conditions, the average level of ammonia-nitrogen downstream from the ArcelorMittal complex could exceed chronic toxicity levels although no recent WQ exceedences have been documented at the monthly NAWQMN station downstream from ArcelorMittal.

The Big Creek to Navigation Channel segment evaluation used lacusturary sampling results from 1996 and 1999, and lotic sampling results immediately downstream from Big Creek in 1996 and 2000. Year 2000 sampling indicated significant improvement downstream from Big Creek since 1996 that likely coincides with CSO remediation work in the basin. Conversely, severely degraded fish communities found in 1999 may be the result of temporary bypasses of sanitary sewers authorized by Ohio EPA to allow construction of CSO controls.

The Total Maximum Daily Load report for the Lower Cuyahoga Watershed requires that ArcelorMittal's permit be written to meet all applicable water quality standards. The current permit does that, based on water quality based limits developed for that permit. A reassessment of those limits in light of the current water quality standards follows.

The TMDL for the Lower Cuyahoga Watershed can be found on the following web site: http://www.epa.state.oh.us/dsw/tmdl/index.html

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.

ArcelorMittal-Cleveland Steel is interactive with NEORSD Southerly WWTP. The CONSWLA (Conservative Substance Wasteload Allocation) program was used to allocate the available assimilative capacity of the Cuyahoga River among the various discharges. Small discharges were fixed at the Inside Mixing Zone Maximum (IMZM) to allow for an equitable division of the assimilative capacity among the larger discharges. Additionally, the use designation of the Cuyahoga River changes to Fish Passage at river mile 5.6 which is the beginning of the shipping channel. The Fish Passage designation requires that criteria for Warmwater Habitat be met during the months from February through May when the flow at USGS gage #04208000 equals or exceeds 703 cfs. Limited Resource Water conditions are applicable for any other time. The potential impact of the Fish Migratory flow (703 cfs) on Southerly WWTP's average preliminary effluent limitations (PELs) was evaluated. All PELs that are protective for the Warmwater Habitat use designation are also protective for the Fish Migratory use. Figure 2 shows the study area of this portion of the Cuyahoga River.

Parameter Selection

Effluent data for ArcelorMittal-Cleveland Steel was used to determine what parameters should undergo wasteload allocation. ArcelorMittal requested from Ohio EPA that effluent data only be considered since June 2002 due to changes in operating procedures (May 2004 for outfall 022). The sources of effluent data are as follows:

Self-monitoring data (SWIMS)	June 2002 through August 2006
Self-monitoring data (outfall 022) (SWIMS)	May 2004 through August 2006
Form 2C data	2006
Ohio EPA data (outfall 002) (compliance, survey)	July/August 2005

The effluent data were checked for outliers and the following values were eliminated from the data set:

Parameter[A]	Outfall(s)	Units	Values
Ammonia (summer)	005	mg/L	1.5. 0.13, 27
	014		5.5
Ammonia (winter)	014	mg/L	1.4, 1.5
Chlorine, total residual	014	mg/L	0.133
Dissolved Solids	017	mg/L	276
Manganese, TR	002	ug/L	309
	022		277
Strontium	002	ug/L	47
Sulfate	023	mg/L	70, 184, 174, 5350
Zinc, TR	023	ug/L	664, 783
	024		282, 371, 386, 377

[A] TR = total recoverable

The average and maximum projected effluent quality (PEQ) values are presented in Table 29. For a summary of the screening results, refer to the parameter groupings in Tables 33-40.

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% of the applicable WQS, the parameter 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 PEQavg or PEQmax is greater than 25% of the applicable WQS, a wasteload allocation is conducted to determine whether the parameter exhibits reasonable potential (and needs to be limited) or if monitoring is required.

Outfalls 001 and 014 contain only once-through non-contact cooling water drawn from the receiving stream upstream of the discharge. The Non-contact Cooling Water Reasonable Potential Rule [OAC 3745-33-07(A)(9)] indicates that the director shall not impose WQBELs for parameters from these cooling waters unless any one of six circumstances occurs. These circumstances include: (1) a determination that a WQBEL is necessary to protect uses, and that there are sources of pollutant other than the intake; (2) when the pollutant concentration in the cooling water is higher than ambient concentrations due to recirculation of the cooling water in the receiving water, and that a limit is necessary to protect designated uses; (3) biological index measurements in the receiving water indicate that the cooling water contributes to an instream impairment; (4) pollutants entering the cooling water system; (5) pollutants added for cooling system maintenance; and (6) pollutants resulting from groundwater sources of the cooling water.

By comparing intake and effluent concentrations, Ohio EPA has determined that the following pollutants found in the outfall 001 effluent come from the plant intake, and are subject to this rule. These pollutants are not allocated as part of this wasteload allocation: aluminum, magnesium, nitrate/nitrite-N and phosphorus.

For outfall 014, the following pollutants come from the intake water, and are subject to the rule: aluminum, barium, boron, fluoride, iron, magnesium, manganese, molybdenum, nitrate/nitrite-N, and phosphorus.

The remaining pollutants at these outfalls are being evaluated in this wasteload allocation because the effluent concentrations are higher than those in the plant intake.

Wasteload Allocation

For those parameters that require a wasteload allocation (WLA), the results are based on the uses assigned to the receiving waterbody in OAC 3745-1. The aquatic life use for the Cuyahoga River from river mile 13.1 to 5.6 is warmwater habitat. The aquatic life use for the ship channel (river mile 5.6 to the mouth) is based on fish migratory conditions and varies with time of year and flow in the river. During the months of February through May whenever the flow at the USGS gage #04208000 equals or exceeds 703 cfs, the aquatic life use is fish passage. For other times of the year, the aquatic life use is limited resource water. The applicable waterbody uses and the associated stream design flows are summarized in Table 31.

Allocations are developed using a percentage of stream design flow (as specified in Table 31), and allocations cannot exceed the Inside Mixing Zone Maximum criteria. The data used in the WLA are listed in Tables 30 and 31. The wasteload allocation results to maintain applicable criteria are presented in Table 32.

Dissolved Metals Translators

A dissolved metals translator (DMT) is the factor used to convert a dissolved metal aquatic life criterion to an effective total recoverable aquatic life criterion with which a total recoverable aquatic life allocation can be calculated as required in the NPDES permit process. Currently, a DMT is based on site- or area-specific field data; each field data sample consists of a total recoverable measurement paired with a dissolved metal measurement. For the Cuyahoga River, there were 5 such paired samples available applicable to cadmium, chromium, copper, lead, nickel, and zinc. To account for the limited quantity of data, the DMT for each of these metals was determined as the lower end of the 95% confidence interval (1-tail) about the geometric mean of the total recoverable-to-dissolved ratios of the sample pairs. Each DMT is metal-specific and is applied by multiplying the dissolved criteria by the DMT, resulting in total effective recoverable criteria which can be used in the wasteload allocation procedures. A DMT for cadmium could not be determined due to shortcomings in the data.

In some cases, it is possible that the use of a DMT may result in instream concentrations of metals that may increase the risk of non-attainment of the use designation. This was evaluated for ArcelorMittal-Cleveland. The application of the dissolved metal translators resulted in effective total recoverable criteria that were higher than the total recoverable criteria listed in OAC 3745-1.

Reasonable Potential

The preliminary effluent limits are the lowest average WLA (average PEL) and the maximum WLA (maximum PEL). To determine the reasonable potential of the discharger to exceed the WLA for each parameter, the facility's effluent quality is compared to the preliminary effluent limits. The average PEQ value (Table 29) is compared to the average PEL (Table 32), and the maximum PEQ value is compared to the maximum PEL. Based on the calculated percentage of the respective average and maximum comparisons, the parameters are assigned to "groups", as listed in Tables 33-40.

Whole Effluent Toxicity WLA

Whole effluent toxicity or "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 AET calculations are similar to those for aquatic life criteria: use the chronic toxicity unit (TU_c) and 7Q10 flow (or the fish migratory flow depending on outfall location) for average, and the acute toxicity unit (TU_a) and 1Q10 for maximum. For ArcelorMittal-Cleveland Steel, the AET values are:

Outfall(s)	Chronic AET (TU_c)	Acute AET (TU_a)
ArcelorMittal-001	**1717**	0.32
ArcelorMittal-002	**39**	0.32
ArcelorMittal-005	**8.1 (FPC: Feb-May)**	0.32
ArcelorMittal-014	**9.8 (FPC: Feb-May)**	0.32
ArcelorMittal-017	**543 (FPC: Feb-May)**	0.31
ArcelorMittal-022	**66**	0.32
ArcelorMittal-023	**No limit (LRW)**	0.30
ArcelorMittal-024	**616**	0.32

FPC=fish passage condition
LRW=limited resource water

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

$$TU_c = \frac{100}{IC_{25}}$$

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):

$$TUc = \frac{100}{\text{geometric mean of NOEC and LOEC}}$$

The acute toxicity unit (TU_a) is defined as 100 divided by the LC50 for the most sensitive test species:

$$TU_a = \frac{100}{LC50}$$

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

When the calculated wasteload allocation is less than 1.0 TU_a, the wasteload allocation is 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 WLA is 30% mortality in 100% effluent based on the dilution ratio of <2 to 1 for the dischargers in this stream segment.

Effluent Limits/Hazard Management Decisions

Federal and State laws/regulation require that dischargers meet both treatment technology-based limits and any more stringent standards needed to comply with state WQS. Permit limits are based on the more restrictive of the two. The listing in Tables 33-40 reflect the hazard assessment (or "groupings") done according to WLA procedures. Tables 41-53 show the draft NPDES limits for ArcelorMittal Cleveland. The draft limits include consideration of treatment technology-based limits, whole effluent toxicity reasonable potential evaluations and other portions of NPDES rules, as well as the water quality-based limits.

Limits common to many outfalls:
All final outfalls except outfall 023 have pH limits of 6.5 to 9.0, based on Water Quality Standards (OAC 3745-1). Outfall 023 does not have pH limits because the pH of outfall 023 is governed by the slag that the landfill is built on, and is not considered a remediable condition.

Many of the final outfalls have oil&grease limits of 15 mg/l average and 20 mg/l maximum. These limits are considered discharge standards for well-operated oil/water separators under normal conditions. These treatment based standards are being continued from the current permit.

Outfall 001:
The Ohio EPA risk assessment (Table 33) places zinc) in group 5 which recommends limits to protect water quality. The small data set available for this pollutant indicates that the PEQ values may not be representative of this discharge. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), we are proposing monitoring, rather than limits, for these pollutants.

We propose to remove the ammonia-nitrogen monitoring requirement in the current permit because the effluent data shows that ammonia from this discharge does not have the reasonable potential to contribute to exceedances of WQS.

Outfall 002:
The Ohio EPA risk assessment (Table 34) places zinc in group 5. This placement as well as the data in Tables 3, 10 and 29 indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality.

In drafting the NPDES permits for ArcelorMittal and the NEORSD Southerly WWTP, Ohio EPA has reallocated zinc loading between the NEORSD discharge and ArcelorMittal Outfall 002. When allocating multiple sources in a stream segment, the director may distribute the loading among the discharges using any appropriate method, based on site-specific considerations [OAC 3745-2-05(A)(8)]. A summary of this zinc wasteload allocation is shown below (all values are ug/l):

Outfall	Zinc Wasteload (avg./max.)	PEQ Values (avg./max)	Zinc Reallocation (avg./max.)
NEORSD 001	263 / 303	57 / 72	261 / 290
ArcelorMittal 002	383 / 303	325 / 574	450 / 765

The reallocation increases zinc concentrations at Outfall 002 more than it decreases concentrations at NEORSD because of the large difference in flow between the two outfalls (8 cfs for 002 vs. approx. 250 cfs for NEORSD).

As a result of this reallocation, Outfall 002 no longer has the reasonable potential to contribute to exceedances of WQS, and the permit contains a monitoring requirement, rather than limits.

The reallocation does not increase requirements for NEORSD because the assimilative capacity of the Cuyahoga River has increased since the last wasteload allocation was completed. Upstream zinc concentrations measured at the Independence Gage are significantly lower than they were 5-10 years ago; also, the latest flow analysis shows that critical low flows at Independence are slightly higher than earlier (see Table 31).

Note that this reallocation applies for this permit only. Ohio EPA may, in future permitting actions, return to the original wasteload allocation based on NEORSD's needs and requirements.

Ohio EPA risk assessment (Table 34) places total dissolved solids in group 4. This placement as well as the data in Tables 3, 10 and 29 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% of the WLA) is required by OAC Rule 3745-33-07(A)(2). The existing permit limits for TDS would be removed from the permit because there is no reasonable potential for TDS at this outfall to contribute to WQS exceedances.

Current monitoring requirements for ammonia, barium, cyanide, manganese, strontium and 1,2,4-trimethylbenzene would also be removed based on the reasonable potential analysis. Monitoring for total suspended solids would continue in the new permit to provide an on-going assessement of ArcelorMittal's contribution to the river's loading.

Outfall 004:
The current monitoring requirements at this outfall (flow and pH) would be continued in the renewed permit.

Outfall 005:
The Ohio EPA risk assessment (Table 35) places chlorine in group 5. This placement as well as the data in Tables 5, 11 and 29 indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1). The current maximum limit, which is based on past and current WLAs, would be continued in the renewed permit. The current average limit would be removed because there is no reasonable potential for the average WQS to be exceeded.

The Ohio EPA risk assessment (Table 35) places copper and free cyanide in group 5 which recommends limits to protect water quality. The copper determination is based on a very small data set; the cyanide determination is based on a very small number of detections in the final effluent (3 detections in 210 samples). In both of these cases, the PEQ values may not be

representative of the discharge – copper because of the small data set, and cyanide because of the possibility of false positive results with these few detections in a large data set. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), we are proposing monitoring, rather than limits, for these pollutants.

Ohio EPA risk assessment (Table 35) places aluminum in group 4. This placement as well as the data in Tables 5, 11 and 29 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% of the WLA) is required by OAC Rule 3745-33-07(A)(2).

Monitoring requirements for ammonia-nitrogen, dissolved solids, lead and zinc would be continued in this permit to track the contributions of this outfall to the river. The permit also includes a new monitoring requirement for low-level mercury at this outfall. Mercury is associated with many primary industrial processes and those process that use steel scrap (because of mercury switches in automobiles). Ohio EPA is requiring that outfalls with these processes collect low-level mercury data to determine the amount of mercury from these processes.

The current monitoring requirements for bis(2-ethylhexyl)phthalate and manganese would be removed in the renewed permit because these pollutants do not have the reasonable potential to contribute to WQS exceedances.

Outfall 008:
The current permit requirements for outfall 008 would be carried over into the renewed permit.

Outfalls 010/011:
Discharges from these outfalls is authorized only when the bypass conditions listed in Part III of the permit are met. The monitoring requirements for days when bypasses occur would be the same as those in the current permit.

Outfall 014:
The Ohio EPA risk assessment (Table 36) places chlorine in group 5. This placement as well as the data in Tables 6, 12 and 29 indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1). The current maximum limit, which is based on past and current WLAs, would be continued in the renewed permit. The current average limit would be removed because there is no reasonable potential for the average WQS to be exceeded.

Ohio EPA risk assessment (Table 36) places copper and zinc in group 5 which recommends limits to protect water quality. This determination is based on a very small data set (1 sample result each for copper and zinc, and the PEQ values may not be representative of the discharge for this reason. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), we are proposing monitoring, rather than limits, for these pollutants.

Outfall 017:
Ohio EPA risk assessment (Table 37) places total dissolved solids in group 4. This placement as well as the data in Tables 7, 13 and 29 supports 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% of the WLA) is required by OAC Rule 3745-33-07(A)(2).

While zinc also falls into group 4, limits are required for zinc because it is one of the pollutants limited by the federal effluent guidelines for the Iron and Steel Industry (40 CFR 420). These treatment-technology-based limits are based on the kilograms of pollutant allowed to be discharged per 1000 kg. of production. The plant production rates used are the maximum 30-day average rates for the past five years. Limits are calculated as follows: zinc limits (kg./day) = effluent guidelines (kg./kkg.) x production (tons./day) x 0.908 kkg/ton, or

[(0.0000939 kg/kkg x 10,744 tons/day (steelmaking existing source prod.) x 0.908 kkg/ton) + (0.0000469 kg/kkg x 2,243 tons/day (vacuum degassing new source prod.) x 0.908 kkg/ton) + (0.0000469 kg/kkg x 2,335 tons/day (continuous casting new source prod.) x 0.908 kkg/ton)] =

1.47 kg/day as a 30-day average limit.

Effluent guideline limits for total suspended solids, oil&grease and lead are calculated in the same way. Not that the oil&grease limits at this outfall have an allowance for storm water that is treated at this steel plant treatment system. Storm water is held, treated and discharged from outfall 017 to prevent overflows of partially treated process water at outfalls 010 and 011. All of the effluent guideline calculations are shown in the attachment to this fact sheet.

This outfall also has maximum concentration limits for lead and zinc. These limits are necessary because the effluent guidelines authorize discharges that would exceed WLA values. The concentration limits are needed to ensure that permit limits meet both WQS and treatment-technology-based limits. Monitoring requirements for molybdenum would be removed because there is no reasonable potential to exceed WQS for molybdenum.

The permit also includes a new monitoring requirement for low-level mercury at this outfall. Mercury is associated with many primary industrial processes and those processes that use steel scrap (because of mercury switches in automobiles). Ohio EPA is requiring that outfalls with these processes collect low-level mercury data to determine the amount of mercury from these processes.

The existing permit limit for chlorine would be continued to ensure that treatment of cooling water additives continues effectively.

Outfall 022:
The Ohio EPA risk assessment (Table 38) places selenium in group 5. This placement as well as the data in Tables 8, 15 and 29 indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1). The thirty day average limit for selenium is based on the current WLA. The permit contains a compliance schedule for selenium because ArcelorMittal can not consistently meet this limit at present.

The Ohio EPA risk assessment (Table 38) places copper and free cyanide in group 5 which recommends limits to protect water quality. The copper determination is based on a very small data set; the cyanide determination is based on a very small number of detections in the final effluent (3 detections in 217 samples). In both of these cases, the PEQ values may not be representative of the discharge – copper because of the small data set, and cyanide because of the possibility of false positive results with these few detections in a large data set. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), we are proposing monitoring, rather than limits, for these pollutants.

Ohio EPA risk assessment (Table 38) places total dissolved solids in group 4. This placement as well as the data in Tables 8, 15 and 29 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% of the WLA) is required by OAC Rule 3745-33-07(A)(2).

In addition to these requirements, Ohio EPA would continue to require monitoring of lead and zinc to track contributions of this outfall to loadings in this segment. The current monitoring requirement for manganese would be removed because there is no reasonable potential for manganese to contribute to WQS exceedances.

Mercury monitoring would be included at outfall 022 because of the use of steel scrap in the steelmaking process. The existing permit limit for chlorine would be continued to ensure that treatment of cooling water additives continues effectively.

Outfall 023:
The Ohio EPA risk assessment (Table 39) places ammonia-nitrogen, copper and fluoride in group 5 which recommends limits to protect water quality. Because of the small data set for each of these parameters, the PEQ values may not be representative of the discharge. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), we are proposing monitoring, rather than limits, for these pollutants

Ohio EPA risk assessment (Table 39) places zinc in group 4. This placement as well as the data in Tables 7, 16 and 29 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% of the WLA) is required by OAC Rule 3745-33-07(A)(2). The current effluent limits for zinc would be removed because there is no reasonable potential for this outfall to contribute to WQS exceedances.

Monitoring requirements for CBOD5, COD, suspended solids, oil&grease and sulfate would continue in the renewed permit.

Outfall 024:
The current monitoring requirements for flow, pH and zinc would continue in the renewed permit. Oil&grease monitoring requirements would be removed because O&G is rarely detected at this outfall, and there is no reasonable potential for this discharge to cause WQS exceedances for O&G.

The permit for ArcelorMittal contains limits and monitoring requirements at several in-plant sampling stations. Monitoring of these outfalls is necessary to measure compliance with federal treatment technology-based limits before the wastewater is diluted by cooling waters.

Outfalls 601/602/603:
ArcelorMittal monitors outfalls 601 and 602 at the treatment plants for process wastewaters prior to mixing with cooling waters and discharging via outfall 002. Some of the treatment technology limits are imposed at stations 601 and 602, but most are included at station 603. Station 603 does not physically exist, but it a station in the permit that reflects the sum of loadings for outfalls 601 and 602.

The treatment technology limits for these outfalls are based on the federal effluent guidelines for the Iron and Steel Industry and the Metal Finishing Industry. As previously stated, treatment-technology-based limits for the Iron and Steel Industry, found in 40 CFR Part 420, are based on the kilograms of pollutant allowed to be discharged per 1000 kg. of production. The plant production rates used are the maximum 30-day average rates for the past five years. The treatment technology limits for the Metal Finishing Industry, found in 40 CFR Part 433, are concentration limits (mg/l); loadings are calculated by multiplying these concentration by flow and a conversion factor. Limits for Iron and Steel wastewaters are calculated as follows: TSS limits (kg./day) = BCT (kg./kkg.) x production (kkg./day); Limits for Metal Finishing wastewaters are calculated as follows: TSS limits (kg/day) = BCT (mg/l) x metal finishing flow (MGD) x 3.785 liters/gallon.

Using 30-day TSS limits for outfall 601 as an example, the TSS limits were calculated:

[(0.16 kg/kkg x 10, 920 tons/day (hot strip mill prod.) x 0.908 kkg/ton) + (0.035 kg/kkg x 7,656 tons/day (acid pickling prod.) x 0.909 kkg/ton) + 2.45 kg/day (acid pickling fume scrubber) + (31 mg/l x 0.5054 MGD (electrogalvanizing process flow) x 3.785 liters/gal.) = 1891 kg/day.

All of the effluent guideline calculations are shown in the attachment to this fact sheet.

The limitations for TSS, oil&grease, lead and zinc are expressed at outfall 603. The limits for O&G (average) and zinc are based on the effluent guidelines. The limits for TSS, O&G (maximum) and lead are based on existing permit limits. These limits are BPJ limits that have been in the permit for several permit cycles, and can not be relaxed due to antibacksliding rules.

The limits for outfall 603 are tiered using outfall numbers 603 and 693. The outfall 603 limits apply in months when the electrogalvanizing plant is running; outfall 693 limits apply when this plant is not in operation.

The limits for naphthalene and tetrachloroethylene are given at outfall 602, because these pollutants are limited only for cold rolling wastewaters, which are discharged only from outfall 602. Ohio EPA is granting a monitoring waiver under 40 CFR 122.44(a)(2) because these parameters are not detected above background levels in this waste stream.

Outfall 601 contains limitations for Total Toxic Organic pollutants because TTO is a limited parameter in the Metal Finishing effluent guidelines. The TTO limit in this permit is calculated as a mass balance of Metal Finishing wastewaters at the effluent guideline concentration (2130

ug/l), and Iron & Steel wastewaters at a BPJ concentration of 350 ug/l. The BPJ figure comes from the 1982 USEPA Development Document – concentrations of organic pollutants in hot forming and acid pickling wastewaters.

The TTO limit was developed using the same method as in the current permit. The new limit is lower than the current limit due to the closure of the electrozinc line, which discharged via outfall 601 in the past.

Outfall 604:
Effluent limits for TSS, cyanide, lead and total phenolics are based on the iron making blast furnace effluent guidelines in 40 CFR Part 420. The attachment to this fact sheet shows all of the effluent guideline calculations. Zinc limits are BPJ limits that can not be relaxed due to antibacksliding rules.

The ammonia-nitrogen limits at this outfall are based on the facility's 301(g) variance. Section 301(g) of the Clean Water Act allows a facility a variance from Best Available Treatment requirements for ammonia and certain other pollutants. To be approved under this variance, a facility must be able to show that it can meet both BPT treatment standards and water quality standards.

ArcelorMittal has made this demonstration previously, and had variance limits included in the current permit. ArcelorMittal has requested renewal of this variance, and Ohio EPA recommended that USEPA renew it; USEPA concurs with Ohio EPA on this variance renewal. The analysis showing that BPT and WQS are met is included in the attachment to this fact sheet.

Outfall 622/632:
Outfall 622 is the treatment system for the steelmaking facilities located on the west side of the Cuyahoga River. In the current permit, pollutants are monitored at outfall 622; limits are imposed at calculated station 632 (wastewater effluent plus any authorized bypasses). In this permit, limits are given at outfall 622, because the bypass in this area has been eliminated.

Effluent limits for these discharges are based on Iron and Steel effluent guidelines and BPJ for non-iron/steel process discharges. Effluent loadings include New Source Performance Standards for the continuous caster, BPJ allowances for Basic Oxygen Furnace process waters, and storm runoff from the BOF process area, and BPJ allowances for cooling tower flows treated at this outfall.

Loading allowances for the Basic oxygen Furnace (semi-wet) and collected storm water and ground water from the production area have been included in these effluent limits based on Best Professional Judgment. While the BAT/BCT rules generally specify zero discharge for these wastewaters, USEPA revised the guidelines in October 2002 to allow discharges from this process when water is used in excess of evaporation rates due to safety considerations. Specifically the rules state:

> "If the permittee demonstrates to the satisfaction of the permitting authority that safety considerations prevent attainment of these limitations, the permitting authority may establish alternative limitations on a best professional judgment basis." (40 CFR 420.43).

The off-gases from the BOF exit the vessel at temperatures of approximately 3000 degrees F. Off gases contain various combustible gases and ferric oxide dust that is captures in an electrostatic precipitator. The West Side BOF uses water to cool, clean and condition the gases prior to removal in the electrostatic precipitator. The water reduces the temperature of the gases to protect the precipitator chambers, and this conditioning also improves the gas cleaning capability. Quantities of water larger than amounts that are evaporated by this system are used for safety considerations to eliminate sparks, and remove large quantities of heavy solids that would otherwise cause duct work and/or precipitator chambers to clog. The BOF and semi-wet gas cleaning system with electrostatic precipitator was built in the late 1960's and became fully operational in 1970.

Ohio EPA believes that these considerations meet the requirements of the effluent guidelines for alternative limitations. The BPJ limitations are established using concentrations of treated BOF/caster effluent cited in USEPA's 1982 Development Document of the Iron and Steel effluent guidelines. These concentrations have also been applied to storm water and ground water from the process area that are collected in a scale pit and treated prior to discharge. An example of how these limits are calculated is: TSS limit = BPJ of BCT (mg/l) x (process flow + storm/ground water flow in MGD) x 3.785 liters/gallon, or for average TSS limits:

50 mg/l x (0.864 MGD + 0.36 MGD) x 3.785 liters/gal. = 232 kg/day

The BPJ allowances for oil&grease, lead, zinc and maximum TSS are calculated using the same formulas. All effluent guideline calculations are shown in the attachment to this fact sheet.

The current permit limits contain a BPJ allowance for the cooling tower blowdown that is routed to the outfall 622/632 treatment system. As this is a utility wastestream, we have used concentrations for cooling tower discharges that are based on past self-reporting data from steam electric power plants that use cooling towers, and effluent data from USEPA's 1982 Development Document for the Steam Electric Power effluent guidelines, and NPDES application form 2C data from other Ohio power plants that use cooling towers.

The cooling tower BPJ allowance is identical to the allowance used in the current permit. These values are shown in the attachment to this fact sheet. For lead and zinc monthly averages, the PEQaverage values (based on OEPA Method A) from the data base were used as the BPJ concentrations. For all maximum values, PEQmaximum concentrations were compared with the actual 99th percentile values from the data base, and the larger of the two values were used as the BPJ concentration. The 30-day average values for TSS and oil&grease originally requested by ArcelorMittal were used as BPJ because they were similar to the PEQ averages calculated from the effluent data. The maximum values for TSS and oil&grease are PEQmaximum values from the data set.

Whole Effluent Toxicity Reasonable Potential

For the ArcelorMittal Cleveland, WLAs for toxicity are listed below.

Outfall(s)	Chronic AET (TU_c)	Acute AET (TU_a)
ArcelorMittal-001	**1652.7**	0.32
ArcelorMittal-002	**37.8**	0.32
ArcelorMittal-005	**8.1 (FPC: Feb-May)**	0.32
ArcelorMittal-014	**9.7 (FPC: Feb-May)**	0.32
ArcelorMittal-017	**537.6 (FPC: Feb-May)**	0.31
ArcelorMittal-022	**63.6**	0.32
ArcelorMittal-023	**No limit (LRW)**	0.30
ArcelorMittal-024	**602.6**	0.32

FPC=fish passage condition
LRW=limited resource water

For dischargers in the Lake Erie Basin, toxicity is assessed by comparing this WLA value to a PEQ value calculated from the effluent toxicity data available. If the PEQ is greater than the WLA, toxicity limits are needed in the permit. This procedure was put in place by USEPA's promulgation of toxicity reasonable potential rules for Ohio on August 4, 2000. These rules replaced Ohio's rules for dischargers in the Lake Erie basin.

The only ArcelorMittal outfall that can have a reliable PEQ calculated is outfall 002 (see Table 25). Outfall 002 had 3 acutely toxic results in 22 samples, with several samples showing sublethal acute toxicity (25-50% mortality). The PEQ is calculated by taking the maximum reported acute toxicity (1.8 TUa) and multiplying by a statistical factor that is based on the number of samples:

PEQmax = 1.8 TUa x 1.4 = 2.5 TUa

Because this PEQ value is greater than the acute toxicity WLA for this outfall, reasonable potential to exceed the narrative "no rapid lethality" standard exists. The draft permit would continue the acute toxicity limit of 1.0 TUa that is in the current permit. A limit of 1.0 TUa is the most stringent limit allowed under OAC Rule 3745-33-07(B)(10).

The test results for outfalls 005 and 022 showed that each outfall had one acutely toxic result in a large set of data (20 samples for 005; 23 samples for 023 – see Tables 26-27). Relatively few results showed sublethal acute effects. As a result, we are considering these two acutely toxic results to be outliers that are not representative of normal discharges. PEQ values could not be calculated for these outfalls. The draft permit contains monitoring requirements for outfalls 005 and 022 to ensure that acute toxicity remains at non-lethal levels.

The other outfalls were not evaluated for toxicity. None of the chemical data or historic toxicity data indicates that toxicity should be present at these outfalls. Chemical-specific limits should be sufficient to control any toxicity from these outfalls.

Chronic toxicity is not expected to be a limiting condition at ArcelorMittal's outfalls, given the WLA values and acute test results.

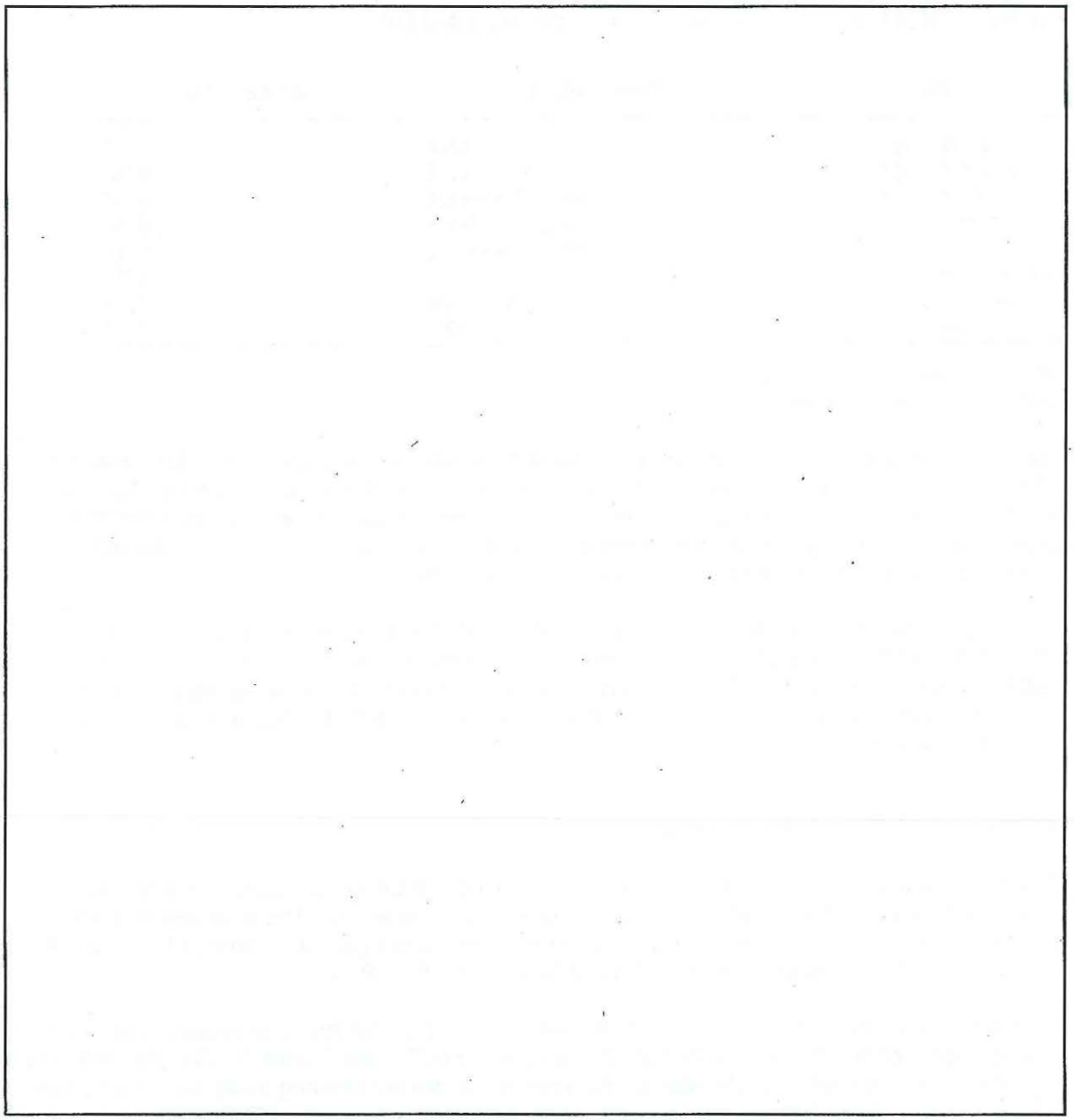

Figure 1. Approximate location of ArcelorMittal Cleveland.

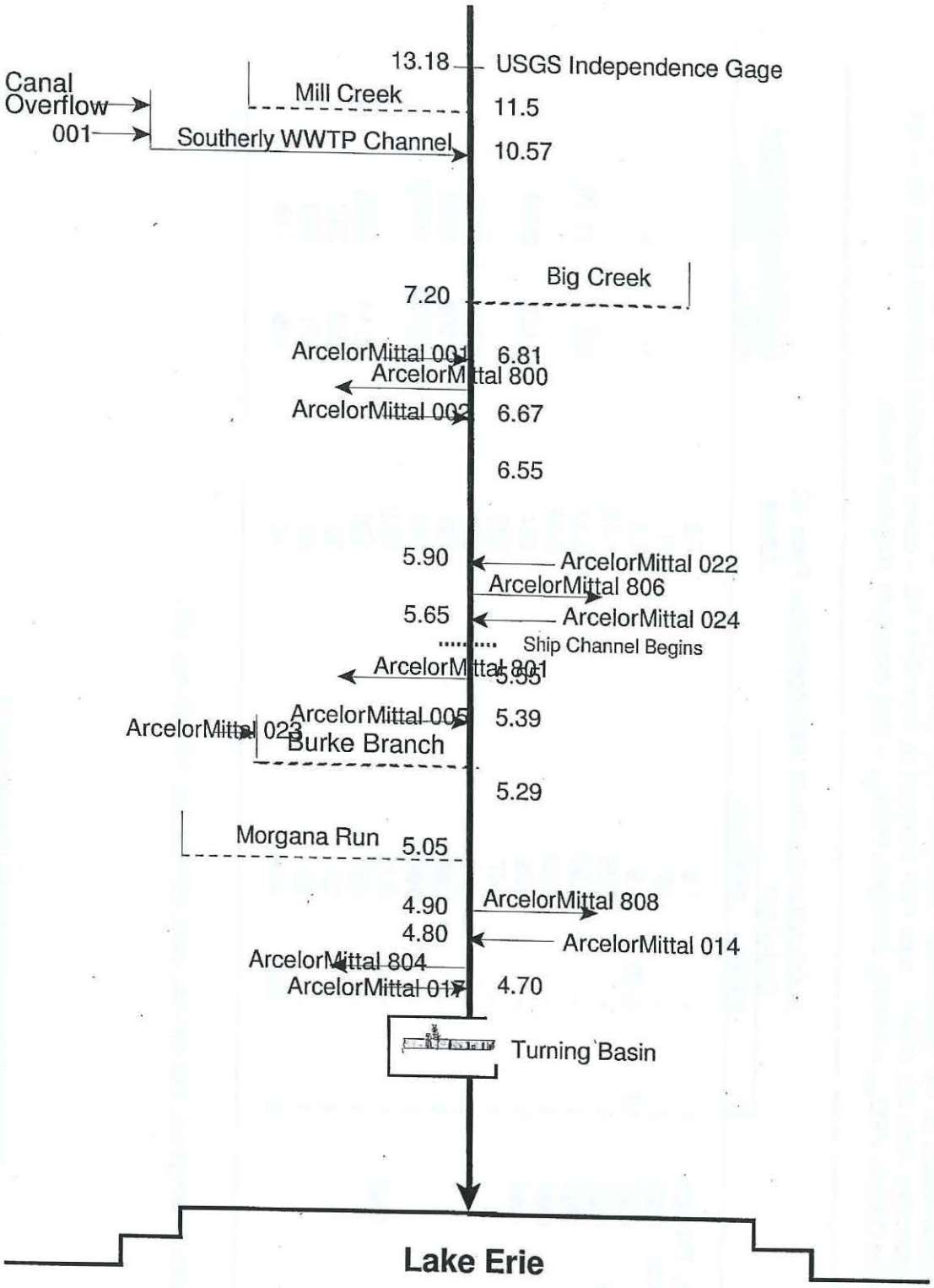

Figure 2. Lower Cuyahoga River Study Area.

Table 2. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfall 3ID00003001. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

		ArcelorMittal Cleveland 2006 Application Form 2C					
		Outfall 001			Intake	DECISION CRITERIA	
PARAMETER		N	mean	maximum		PEQ_{avg}	PEQ_{max}
Organic Carbon, Tot	mg/l	1	-	7.9	7.8		
Suspended Solids	mg/l	1	-	13	11		
Ammonia-N	mg/l	12	0.82	1.9	0.5	**	**
Nitrate/Nitrite-N	mg/l	1	-	0.35	1.19		
Fluoride	mg/l	1	-	1.90	0.41	8.6	11.78
Phosphorus	mg/l	1	-	0.09	0.54		
Sulfate	mg/l	1	-	483	124	2186	2995
Aluminum		1	-	147	295		
Barium		1	-	104	53	471	645
Boron		1	-	245	197	1109	1519
Iron		1	-	2660	613	12039	16492
Magnesium	mg/l	1	-	8.15	20.2		
Manganese		1	-	467	106	2114	2895
Molybdenum		1	-	35	18	158	217
Zinc		1	-	82	69	371	508
Benzene		2	23.2	46.4	<5	129	176

** - ammonia-N PEQs: 1.69 mg/l avg., 2.86 mg/l max. (sum), 0.97 mg/l avg., 1.66 mg/l max. (win)

Table 3. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfall 3ID00003002. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

PARAMETER		Ohio EPA 06/21/05	Ohio EPA 08/30/05	Application Form 2C Outfall 002 N	mean	maximum	Intake	DECISION CRITERIA PEQ_{avg}	PEQ_{max}
BOD5	mg/l	3.3	15	1	-	6.0	4.0		
COD	mg/l	26	69	1	-	<20	<20		
Organic Carbon, Tot.	mg/l	NA	NA	1	-	10.1	7.8		
Suspended Solids	mg/l	<5	<5	49	10	41	11		
Dissolved Solids	mg/l	662	1050	NA	NA	NA	NA	1385	1703
Chloride	mg/l	173	309	NA	NA	NA	NA	857	1174
Ammonia-N	mg/l	0.108	0.050	12	0.3	1.0	0.5	**	**
Nitrate/Nitrite-N	mg/l	4.66	8.98	1	-	0.75	1.19	19.67	26.94
Kjeldahl Nitrogen	mg/l	1.29	1.46	1	-	<0.1**	0.7**		
Fluoride	mg/l	NA	NA	1	-	0.84	0.41	3.80	5.21
Oil&grease	mg/l	2.3	2.0	48	<2.0	24.3	<2.0		
Phosphorus	mg/l	0.044	0.035	1	-	0.37	0.54	0.8	1.0
Sulfate	mg/l	NA	NA	1	-	168	124	760	1042
Hardness	mg/l	299	543	NA	NA	NA	NA		
Aluminum		<200	<200	1	-	95	295	430	589
Antimony		NA	NA	1	-	17	<10	77	105
Barium		30	42	12	40	57	53	154	241
Boron		NA	NA	1	-	89	197	403	552
Iron		521	230	1	-	119	613	1141	1563
Lead		2.9	<2.0	1	-	<10	<10	8.0	11
Magnesium	mg/l	15	13	1	-	9.84	20.2	33	45
Manganese		44	32	12	45	119	106	99	149
Molybdenum		NA	NA	1	-	29	18	131	180
Potassium	mg/l	8	8	NA	NA	NA	NA	22	30
Strontium		773	577	NA	NA	NA	NA	759	1049
Zinc		108	81	96	152	684	69	325	574
Cyanide, T.	mg/l	<0.005*	0.006*	1	-	<0.010	<0.010	0.017	0.023
Chloromethane		<0.5	0.78	1	-	<5	<5	2.16	2.96
Chloroform		0.71	0.55	1	-	<5	<5	1.97	2.70
Naphthalene		0.55	<0.5	1	-	<20	<20	1.5	2.09

** - ammonia-N PEQs: 0.64 mg/l avg., 0.99 mg/l max. (sum), 0.77 mg/l avg., 1.48 mg/l max. (win)

Table 4. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfalls 3ID00003601 and 3ID00003602. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

PARAMETER		Application Form 2C Outfall 601 N	mean	maximum	Application Form 2C Outfall 602 N	mean	maximum
BOD	mg/l	1	-	3	1	-	8
Organic Carbon, Tot.	mg/l	1	-	4.7	1	-	10.1
Suspended Solids	mg/l	96	6	28	96	7	105
Nitrate/Nitrite-N	mg/l	1	-	0.61	1	-	0.77
Organic-N, Tot.	mg/l	1	-	0.5	1	-	0.8
Fluoride	mg/l	1	-	0.86	1	-	0.81
Oil&grease	mg/l	96	<2.0	14	96	1.2	62.7
Phosphorus	mg/l	1	-	0.13	1	-	0.17
Sulfate	mg/l	1	-	244	1	-	120
Aluminum		1	-	71	1	-	247
Antimony		1	-	<10	1	-	15
Barium		1	-	29	1	-	35
Boron		1	-	106	1	-	194
Iron		1	-	513	1	-	306
Lead		96	<10	16	96	0.65	15
Magnesium	mg/l	1	-	15.1	1	-	15.7
Manganese		1	-	10	1	-	53
Molybdenum		1	-	39	1	-	32
Zinc		96	162	644	96	34	80
Phenolics, Tot.		1	-	10	1	-	19

Table 5. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfalls 3ID00003005 and 3ID00003604. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

PARAMETER		Application Form 2C Outfall 604 N	mean	maximum	Application Form 2C Outfall 005 N	mean	maximum	Intake	DECISION CRITERIA PEQ_{avg}	PEQ_{max}
BOD	mg/l	1	–	8	1	–	5.3	6.3		
COD	mg/l	1	–	73	1	–	35	131		
Organic Carbon	mg/l	1	–	5.7	1	–	8.1	8.8		
Suspended Solids	mg/l	24	31	453	1	–	91	653		
Ammonia-N	mg/l	48	24	58.7	48	1.4	27	1.0	**	**
Nitrate/Nitrite- N	mg/l	1	–	0.30	1	–	1.27	1.13	5.75	7.87
Organic-N	mg/l	1	–	1.6	1	–	<1.0	<1.0		
Fluoride	mg/l	1	–	12.97	1	–	0.34	0.23	1.54	2.11
Phosphorus	mg/l	1	–	0.17	1	–	<0.05	<0.05		
Sulfate	mg/l	1	–	266	1	–	69	75	312	428
Aluminum		1	–	579	1	–	3860	11600	17470	23932
Antimony		1	–	13	1	–	<10	<10		
Barium		1	–	104	1	–	56	102	253	347
Boron		1	–	691	1	–	64	55	290	397
Copper		1	–	<10	1	–	14	28	63	87
Iron		1	–	780	1	–	6230	22600	28197	38626
Lead		48	39	394	12	<10	12	23	11	17
Magnesium	mg/l	1	–	56.8	1	–	13.6	15.8	61.6	84.3
Manganese		12	491	1090	12	106	262	543	166	226
Molybdenum		1	–	32	1	–	18	14	81	112
Titanium		1	–	<10	1	–	46	122	208	285
Zinc		48	185	789	48	39	130	166	72	99
Cyanide, Tot.	mg/l	24	<0.01	2.75	1	–	<10	<10	0.036*	0.049*
Phenolics, Tot.		12	31	121	1	–	6	<7	27	37

* - free cyanide data
** - ammonia-N PEQs: 1.12 mg/l avg., 1.61 mg/l max. (sum), 1.06 mg/l avg., 1.47 mg/l max. (win)

Table 6. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfall 3ID00003014. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

		ArcelorMittal Cleveland 2006 Application Form 2C					
		Outfall 014			Intake	DECISION CRITERIA	
PARAMETER		N	mean	maximum		PEQ_{avg}	PEQ_{max}
Organic Carbon, Tot.	mg/l	1	–	7.4	7.6		
Suspended Solids	mg/l	48	44.5	292	6	118	176
Ammonia-N	mg/l	48	0.8	5.5	0.2	**	**
Nitrate/Nitrite-N	mg/l	1	–	1.75	1.57		
Fluoride	mg/l	1	–	0.44	0.42		
Oil&grease	mg/l	48	<2.0	21	<2.0		
Phosphorus	mg/l	1	–	0.21	0.20		
Sulfate	mg/l	1	–	66	79		
Aluminum		1	–	714	850		
Barium		1	–	41	44		
Boron		1	–	128	120		
Copper		1	–	10	<10	45	62
Iron		1	–	811	1090		
Magnesium	mg/l	1	–	16.0	15.7		
Manganese		1	–	80	83		
Molybdenum		1	–	12	15		
Zinc		1	–	39	31	177	242

** - ammonia-N PEQs: 1.11 mg/l avg., 1.65 mg/l max. (sum), 1.02 mg/l avg., 1.46 mg/l max. (win)

Table 7. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfalls 3ID00003017 and 3ID00003023. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

	Application Form 2C Outfall 017			DECISION CRITERIA		Application Form 2C Outfall 023			DECISION CRITERIA	
PARAMETER	N	mean	maximum	PEQ_{avg}	PEQ_{max}	N	mean	maximum	PEQ_{avg}	PEQ_{max}
BOD mg/l	1	-	<2.0			12	13	24		
COD mg/l	1	-	<20			12	80	118		
Organic Carbon mg/l	1	-	4.7			1	-	20.7		
Suspended Solids mg/l	48	4	20	10	15	12	20	59	110	124
Ammonia-N mg/l	1	-	<0.1			1	-	4.5	**	**
Nitrate/Nitrite-N mg/l	1	-	<0.05			1	-	0.28	1.27	1.74
Organic-N mg/l	1	-	<0.1			1	-	3.0		
Fluoride mg/l	1	-	32.75	148	203	1	-	1.27	5.75	7.87
Oil&grease mg/l	48	<2.0	6.0			46	0.81	5.2		
Phosphorus mg/l	1	-	0.70	3.17	4.34	1	-	0.36	1.63	2.23
Sulfate mg/l	1	-	190	860	1178	12	586	927	1056	1379
Aluminum	1	-	700	3168	4340	1	-	48	217	298
Antimony	1	-	32	145	198	1	-	<10		
Barium	1	-	160	724	992	1	-	22	100	136
Boron	1	-	205	928	1271	1	-	227	1027	1407
Copper	1	-	<10			1	-	18	81	112
Iron	1	-	634	2869	3931	1	-	187	846	1159
Lead	96	<10	16	7.4	12	1	-	<10		
Magnesium mg/l	1	-	12.4	56.1	76.9	1	-	33.0	149	205
Manganese	1	-	21	95	130	1	-	21	95	130
Molybdenum	48	229	720	3173	4404	1	-	49	222	304
Zinc	96	107	289	154	235	12	121	422	214	345

** - ammonia-N PEQs – no summer data available, 20.37 mg/l avg., 27.9 mg/l max. (win)

Table 8. Effluent Characterization and Decision Criteria

Summary of analytical results for the ArcelorMittal Cleveland outfalls 3ID00003022 and 3ID00003622. All values are in µg/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

PARAMETER		Application Form 2C Outfall 622 N	mean	maximum	Application Form 2C Outfall 022 N	mean	maximum	Intake	DECISION CRITERIA PEQ_{avg}	PEQ_{max}
COD	mg/l	1	-	95	1	-	102	81		
Organic Carbon	mg/l	1	-	8.6	1	-	8.5	8.6		
Suspended Solids	mg/l	96	6	93	1	-	8	54		
Ammonia-N	mg/l	1	-	0.3	1	-	<0.1	0.5		
Nitrate/Nitrite-N	mg/l	1	-	0.33	1	-	1.93	0.67	8.74	11.97
Fluoride	mg/l	1	-	6.03	1	-	5.99	0.24	27.11	37.14
Oil&grease	mg/l	96	<2.0	2.8	96	<2.0	2.1	<2.0		
Phosphorus	mg/l	1	-	0.06	1	-	<0.05	0.26		
Sulfate	mg/l	1	-	135	1	-	163	74	738	1011
Aluminum		1	-	148	1	-	108	2650	489	670
Barium		1	-	22	1	-	19	56	86	118
Boron		1	-	122	1	-	103	76	466	639
Copper		1	-	11	1	-	10	19	45	62
Iron		1	-	1060	1	-	617	2830	2793	3825
Lead		96	<10	30	93	<10	31	<10	8.5	15
Magnesium	mg/l	1	-	12.9	1	-	13.1	14.6	59.3	81.2
Manganese		1	-	56	1	-	52	112	128	189
Molybdenum		1	-	28	1	-	26	17	118	161
Titanium		1	-	10	1	-	<10	87		
Zinc		96	82	301	93	41.5	155	37	65	105

Table 9. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003001 and 3ID00003004. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=001

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE	N	PEQavg	PEQmax
AMMONIA NH3-N	MAY-OCT	MG/L	Monitor		23	0.6	1.4	0-1.9	17	1.69	2.86
		KG/DAY	--	--	23	0.04164	0.2411	0-1.9939			
	NOV-APR	MG/L	Monitor		26	0.4	1.1	0-1.7	12	0.97	1.66
		KG/DAY	--	--	26	0.04428	0.14761	0-0.1681			
CONDUIT FLOW	ANNUAL	MGD	Monitor		1382	0.022	0.074	0.0004-3.7897			
PH	ANNUAL	S.U.	6.5 to 9.0		124	6.7*	11.5	5.1-11.9			

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=004

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE
CONDUIT FLOW	ANNUAL	MGD	Monitor		1825	0.022	0.108	0-2.7974
PH	ANNUAL	S.U.	6.5 to 9.0		131	6.8*	8.7	4-9.6

Table 10. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003002. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=002

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE	N	PEQavg	PEQmax
AMMONIA NH3-N	MAY-OCT	MG/L	Monitor		24	0.3	0.8	0-1	18	0.64	0.99
		KG/DAY	--	--	24	5.26872	13.3686	0-16.257			
	NOV-APR	MG/L	Monitor		26	0.3	0.7	0-1	11	0.77	1.48
		KG/DAY	--	--	26	6.61618	15.5865	0-19.425			
BARIUM TOT REC	ANNUAL	UG/L	Monitor		50	57	194	20-206	50	154	241
		KG/DAY	--	--	50	0.99538	3.32411	0.2674-3.5673			
BIS(2-ETHYLHEXL)	ANNUAL	UG/L	--	--	10	0	7.9	0-7.9			
		KG/DAY	--	--	10	0	0.19795	0-0.1979			
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	4.6	6.63	0.0713-7.16			
CYANIDE FREE	ANNUAL	MG/L	Monitor		217	0	0	0-0			
		MG/L	--	--	40	0	0	0-0			
MANGANES TOT REC	ANNUAL	UG/L	Monitor		42	49	170	0-309	35	99	149
		KG/DAY	--	--	42	0.86601	2.82475	0-5.2981			
MERCURY TOT REC	ANNUAL	UG/L	--	--	88	0	0	0-0.4			
		KG/DAY	--	--	88	0	0	0-0.0099			
OIL GRSE TOT	ANNUAL	MG/L	15	20	257	0	6.1	0-24.3			
		KG/DAY	--	--	257	0	113.913	0-484.99			
PH	ANNUAL	S.U.	6.5 to 9.0		257	7.2*	8.2	6.8-8.9			
RESIDUE DIS-105C	ANNUAL	MG/L	2007	--	258	1076	1586	436-2788	210	1385	1704
		KG/DAY	42645	--	258	18729.5	32217.2	737.37-51074			
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		258	10	39	0-155			
		KG/DAY	--	--	258	179.697	693.052	0-2767.8			
STRONTUM SR,TOT	ANNUAL	UG/L	Monitor		50	477	935	47-1020	50	759	1049
		KG/DAY	--	--	50	8.05721	15.3226	0.6289-16.632			
TOX-UNIT AC-CERI T	ANNUAL	TUA	--	1.0	19	0	0.4	0-1.1			
TOX-UNIT ACU-PIME	ANNUAL	TUA	--	1.0	19	0.1	0.7	0-1.8			
TOX-UNIT CHR-CERI	ANNUAL	TUC	--	--	3	2.8	5.6	0-5.6			
TOX-UNIT CHR-PIME	ANNUAL	TUC	--	--	3	0	0	0-0			
1,2,4-TRIMETHYLBE	ANNUAL	UG/L	Monitor		50	0	0	0-6	50	4.38	6
		KG/DAY	--	--	50	0	0	0-0.1053			
ZINC TOT REC	ANNUAL	UG/L	Monitor		512	156	503	0-2110	420	325	574
		KG/DAY	--	--	512	2.73746	9.67385	0-36.178			

Table 11. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003005. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=005

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE	N	PEQavg	PEQmax
ADDTVY FACTR CARCI	ANNUAL		--	--	10	0	0	0-0			
AMMONIA NH3-N	MAY-OCT	MG/L	Monitor		130	0.7	1.4	0-27	65	1.12	1.61
		KG/DAY	--	--	130	108.285	242.291	0-5273			
	NOV-APR	MG/L	Monitor		126	0.7	1.5	0-2.3	76	1.06	1.47
		KG/DAY	--	--	126	97.4963	219.606	0-356.88			
BIS(2-ETHYLHEXL)	ANNUAL	UG/L	Monitor		60	0	8.3	0-39.6			
		KG/DAY	--	--	60	0	1.05976	0-3.226			
CHLORINE TOT RESD	ANNUAL	MG/L	0.018	0.022	209	0	0.04	0-0.462	208	0.019	0.026
		KG/DAY	3.49	4.23	209	0	3.9881	0-8.6866			
CONDUIT FLOW	ANNUAL	MGD	Monitor		1825	40.59	50	0.202-79.922			
CYANIDE FREE	ANNUAL	MG/L	Monitor		211	0	0	0-0.07	210	0.036	0.049
		KG/DAY	--	--	211	0	0	0-10.913			
		MG/L	Monitor		45	0	0	0-0			
HALOMETH SUM OF	ANNUAL	UG/L	--	--	10	0	0	0-0			
LEAD TOT REC	ANNUAL	UG/L	Monitor		57	0	12	0-17	50	11	17
		KG/DAY	--	--	57	0	1.61544	0-2.5556			
MANGANES TOT REC	ANNUAL	UG/L	Monitor		50	110	262	36-330	50	166	226
		KG/DAY	--	--	50	14.4538	33.9018	0.0858-50.216			
PAHS	ANNUAL	UG/L	--	--	2	0	0	0-0			
PH	ANNUAL	S.U.	6.5 to 9.0		255	7*	8.1	5.8-8.5			
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		211	556	1324	170-2458	209	873	1145
		KG/DAY	--	--	211	81136.9	193588	282.89-383212			
HIGH WATER TEMP	ANNUAL	DEG F	Monitor		255	72	97	40-102			
TOX-UNIT AC-CERI T	ANNUAL	TUA	Monitor		16	0	0	0-0.2			
TOX-UNIT ACU-PIME	ANNUAL	TUA	Monitor		16	0.1	0.4	0-0.5			
TOX-UNIT CHR-CERI	ANNUAL	TUC	--	--	6	0	0	0-0			
TOX-UNIT CHR-PIME	ANNUAL	TUC	--	--	6	0	1.6	0-1.6			
ZINC TOT REC	ANNUAL	UG/L	Monitor		256	40	102	0-195	210	72	99
		KG/DAY	--	--	256	5.9523	16.9009	0-31.35			

Table 12. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003008 and 3ID00003014. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=008

			CURRENT PERMIT		PERIOD = JAN01 THRU NOV05			
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE
CBOD 5 DAY	MAY-OCT	MG/L	Monitor		10	0	8.2	0-8.2
		KG/DAY	--	--	10	0	2.57E-8	0-26E-9
	NOV-APR	MG/L	Monitor		22	0	8.6	0-19.9
		KG/DAY	--	--	22	0	0.00687	0-0.0125
FLOW RATE	ANNUAL	GPD	Monitor		32	432	1662	0-142857
OIL GRSE TOT	ANNUAL	MG/L	15	20	32	0	2.4	0-5.2
		KG/DAY	--	--	32	0	0.00491	0-0.0065
PH	ANNUAL	S.U.	6.5 to 9.0		33	7.1*	8.8	6.97-9
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		32	11	125	0-224
		KG/DAY	--	--	32	0.0109	0.17986	0-2.1629

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=014

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE	N	PEQavg	PEQmax
AMMONIA NH3-N	MAY-OCT	MG/L	Monitor		130	0.6	1.1	0-5.5	76	1.02	1.46
		KG/DAY	--	--	130	48.2921	149.886	0-749.43			
	NOV-APR	MG/L	Monitor		127	0.6	1.1	0-2.2	50	0.86	1.19
		KG/DAY	--	--	127	48.2921	149.886	0-299.77			
CHLORINE TOT RESD	ANNUAL	MG/L	0.019	0.022	230	0	0.03	0-0.133	228	0.013	0.021
		KG/DAY	--	--	230	0	1.96214	0-8.6988			
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	17.28	36	0.115-61.897			
OIL GRSE TOT	ANNUAL	MG/L	Monitor		256	0	0	0-21			
		KG/DAY	--	--	256	0	0	0-2861.5			
PH	ANNUAL	S.U.	6.5 to 9.0		212	7.1*	7.9	6.2-10.5			
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		257	580	1282	248-9810	209	898	1187
		KG/DAY	--	--	257	58341.1	116639	269-182316			
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		257	28	159	0-490	209	118	176
		KG/DAY	--	--	257	2550.79	15453.5	0-39788			
HIGH WATER TEMP	ANNUAL	DEG F	Monitor		257	71	97	36-120			

Table 13. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003017. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=017

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**	**N**	**PEQavg**	**PEQmax**
CADMIUM TOT REC	ANNUAL	UG/L	--	--	45	0	0	0-13			
		KG/DAY	--	--	45	0	0	0-0.0164			
CHLORINE TOT RESD	ANNUAL	MG/L	--	0.038	211	0	0.02	0-0.1	209	0.011	0.015
		KG/DAY	--	0.027	211	0	0.02706	0-0.1174			
CONDUIT FLOW	ANNUAL	MGD	Monitor		1825	0.335	0.897	0.021-3.103			
LEAD TOT REC	ANNUAL	UG/L	--	5000	512	0	11	0-37	420	7.4	12
		KG/DAY	0.848	2.54	512	0	0.00593	0-0.0593			
MOLY MO,TOT	ANNUAL	UG/L	Monitor		212	569	3100	13-4490	210	3173	4404
		KG/DAY	--	--	212	0.50711	2.63542	0.0268-16.325			
OIL GRSE TOT	ANNUAL	MG/L	15	20	258	0	2.4	0-9.4			
		KG/DAY	16.0	23.9	258	0	3.97349	0-18.009			
PH MAX	ANNUAL	S.U.	--	9.0	1212	7.6*	8.6	7.1-9			
PH MAX	ANNUAL	S.U.	--	9.0	610	8.3	8.6	7.6-9			
PH MIN	ANNUAL	S.U.	--	6.5	1212	7.2*	8.2	5-8.5			
PH MIN	ANNUAL	S.U.	--	6.5	610	8	8.3	6.6-8.4			
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		212	1084	1504	276-1896	209	1368	1683
		KG/DAY	--	--	212	1176.98	3085.14	107.52-9912.7			
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		257	0	10	0-29	209	10	15
		KG/DAY	--	--	257	0	16.9568	0-39.758			
WATER TEMP.	ANNUAL	DEG F	Monitor		212	81	94.3	41-99.7			
ZINC TOT REC	ANNUAL	UG/L	--	470	512	102	280	13-849	420	154	235
		KG/DAY	1.27	3.82	512	0.12484	0.49795	0.0068-6.4949			

Table 14. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003010 and 3ID00003011. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=010

			CURRENT PERMIT		PERIOD = NOV01 THRU AUG03			
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE
CONDUIT FLOW	ANNUAL	MGD	Monitor		3	0.096	0.512	0.078-0.512
LEAD TOT REC	ANNUAL	UG/L	Monitor		3	0	16	0-16
		KG/DAY	--	--	3	0	0.00472	0-0.0047
OIL GRSE TOT	ANNUAL	MG/L	Monitor		3	0	1.2	0-1.2
		KG/DAY	--	--	3	0	0.43603	0-0.436
ZINC TOT REC	ANNUAL	UG/L	Monitor		3	306	883	128-883
		KG/DAY	--	--	3	0.24805	0.26069	0.1112-0.2607

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=011

			CURRENT PERMIT		PERIOD = AUG01 THRU AUG01			
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE
CONDUIT FLOW	ANNUAL	MGD	Monitor		1	0.215	0.215	0.215-0.215
LEAD TOT REC	ANNUAL	UG/L	Monitor		1	284	284	284-284
		KG/DAY	--	--	1	0.23111	0.23111	0.2311-0.2311
OIL GRSE TOT	ANNUAL	MG/L	Monitor		1	14.2	14.2	14.2-14.2
		KG/DAY	--	--	1	11.5556	11.5556	11.556-11.556
ZINC TOT REC	ANNUAL	UG/L	Monitor		1	4384	4384	4384-4384
		KG/DAY	--	--	1	3.56759	3.56759	3.5676-3.5676

Table 15. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003022. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=022

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**	**N**	**PEQavg**	**PEQmax**
CHLORINE TOT RESD	ANNUAL	MG/L	0.021	0.024	205	0	0.03	0-0.06	107	0	0
		KG/DAY	--	--	205	0	0.07434	0-0.3822			
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	1.4	5.415	0.055-11.246			
CYANIDE FREE	ANNUAL	MG/L	Monitor		414	0	0	0-0.2	217	0.1	0.14
		KG/DAY	--	--	414	0	0	0-0.4095			
		MG/L	Monitor		45	0	0	0-0			
LEAD TOT REC	ANNUAL	UG/L	Monitor		425	0	11	0-132	217	8.5	15
		KG/DAY	--	--	425	0	0.04133	0-2.8209			
MANGANES TOT REC	ANNUAL	UG/L	--	--	253	105	210	24-877	253	128	189
		KG/DAY	--	--	253	0.24322	1.10299	0.0173-5.1783			
OIL GRSE TOT	ANNUAL	MG/L	15	20	502	0	2.4	0-11.4			
		KG/DAY	--	--	502	0	33.2111	0-193.34			
PH	ANNUAL	S.U.			502	7.2*	8.5	6.5-9.2			
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		502	892	1542	220-3338	216	897	1159
		KG/DAY	--	--	502	3765.14	22227.1	340.57-39060			
SELENIUM TOT REC	ANNUAL	UG/L	Monitor		51	0	21	0-101	27	34	47
		KG/DAY	--	--	51	0	0.09241	0-0.2659			
WATER TEMP.	ANNUAL	DEG F	Monitor		251	60.2	75.5	35-84			
TOX-UNIT AC-CERI T	ANNUAL	TUA	Monitor		26	0	0.3	0-3.9			
TOX-UNIT ACU-PIME	ANNUAL	TUA	Monitor		26	0	0.3	0-0.3			
ZINC TOT REC	ANNUAL	UG/L	Monitor		502	38	155	0-703	217	65	105
		KG/DAY	--	--	502	0.16109	2.88705	0-19.85			

Table 16. Effluent Characterization and Decision Criteria

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003023 and 3ID00003024. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=023

			CURRENT PERMIT		PERIOD = NOV01 THRU DEC05				DECISION CRITERIA		
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE	N	PEQavg	PEQmax
BOD 5 DAY	MAY-OCT	MG/L	Monitor		24	20	43.8	0-49.5			
		KG/DAY	--	--	24	4.08791	10.1559	0-13.213			
	NOV-APR	MG/L	Monitor		26	23.5	38.9	6.9-40.1			
		KG/DAY	--	--	26	3.611	28.0836	0.0517-30.331			
COD	ANNUAL	MG/L	Monitor		50	103	150	0-157			
		KG/DAY	--	--	50	15.6972	52.8973	0-99.742			
CONDUIT FLOW	ANNUAL	MGD	Monitor		50	0.051	0.2315	0.0005-0.2541			
OIL GRSE TOT	ANNUAL	MG/L	Monitor		211	0	5	0-18			
		KG/DAY	--	--	211	0	0.46873	0-2.2892			
PH	ANNUAL	S.U.	Monitor		50	8.1*	9.7	7.9-9.8			
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		55	0	53	0-132	52	110	124
		KG/DAY	--	--	55	0	11.4337	0-32.532			
SULFATE SO4	ANNUAL	MG/L	Monitor		50	850	1175	70-1500	46	1056	1379
		KG/DAY	--	--	50	141.559	557.057	1.492-1226.3			
ZINC TOT REC	ANNUAL	UG/L	--	540	52	48	313	0-664	50	214	345
		KG/DAY	--	--	52	0.00742	0.09041	0-0.3698			

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=024

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05				DECISION CRITERIA		
PARAMETER	SEASON	UNITS	30 DAY	DAILY	N	50 PCTL	95 PCTL	RANGE	N	PEQavg	PEQmax
CONDUIT FLOW	ANNUAL	MGD	Monitor		593	0.072	0.1	0.003-0.253			
OIL GRSE TOT	ANNUAL	MG/L	15	20	251	0	0	0-5			
		KG/DAY	--	--	251	0	0	0-1.8925			
PH	ANNUAL	S.U.	6.5 to 9.0		249	7*	8.3	6.4-9.5			
ZINC TOT REC	ANNUAL	UG/L	Monitor		206	21	145	0-386	204	70	106
		KG/DAY	--	--	206	0.00654	0.03952	0-0.1084			

Table 17. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003601. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=601

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	2.5	4.36	0.624-4.81
COPPER TOT REC	ANNUAL	UG/L	--	--	88	12	48	0-115
		KG/DAY	--	--	88	0.19217	0.76723	0-1.8382
CYANIDE FREE	ANNUAL	MG/L	Monitor		424	0	0	0-0.03
		KG/DAY	--	--	424	0	0	0-0.4593
		MG/L	Monitor		87	0	0	0-0
LEAD TOT REC	ANNUAL	UG/L	Monitor		512	0	11	0-405
		KG/DAY	--	--	512	0	0.09393	0-6.9181
OIL GRSE TOT	ANNUAL	MG/L	Monitor		512	0	5.2	0-26.4
		KG/DAY	--	--	512	0	76.3056	0-354.73
PH	ANNUAL	S.U.	Monitor		512	7.2*	8.3	6.5-10.2
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		512	1248	2088	132.4-3344
		KG/DAY	--	--	512	12872.5	23090.4	1178.2-32788
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		512	7	22	0-72
		KG/DAY	--	--	512	77.6379	293.527	0-759.76
TTO	ANNUAL	UG/L	--	800	24	0	0	0-0
ZINC TOT REC	ANNUAL	UG/L	Monitor		512	146	425	0-1040
		KG/DAY	--	--	512	1.55698	5.49085	0-13.019

Table 18. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003602. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=602

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	1.732	2.202	0.113-2.72
COPPER TOT REC	ANNUAL	UG/L	--	--	88	0	48	0-124
		KG/DAY	--	--	88	0	0.06534	0-0.1525
CYANIDE FREE	ANNUAL	MG/L	Monitor		424	0	0	0-0.03
		KG/DAY	--	--	424	0	0	0-0.2094
		MG/L	Monitor		88	0	0.02	0-0.03
		KG/DAY	--	--	88	0	0.02142	0-0.055
LEAD TOT REC	ANNUAL	UG/L	Monitor		512	0	0	0-50
		KG/DAY	--	--	512	0	0	0-0.3715
NAPTHALENE	ANNUAL	UG/L	Monitor		14	0	17.4	0-18.5
		KG/DAY	--	--	14	0	0.01169	0-0.0195
OIL GRSE TOT	ANNUAL	MG/L	Monitor		512	0	25	0-105.2
		KG/DAY	--	--	512	0	61.317	0-482
PH	ANNUAL	S.U.	Monitor		512	7.1*	8.3	6.6-11.86
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		512	810	1502	266-3558
		KG/DAY	--	--	512	3964.7	7864.93	374.2-17949
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		512	6	28	0-158
		KG/DAY	--	--	512	22.199	142.789	0-740.4
ZINC TOT REC	ANNUAL	UG/L	Monitor		512	39	230	0-766
		KG/DAY	--	--	512	0.21757	0.97517	0-2.7978

Table 19. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003603. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=603

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	4.295	4.87	1.145-5.576
COPPER TOT REC	ANNUAL	UG/L	--	--	86	12	53.69	0-115.64
		KG/DAY	--	--	86	0.20453	0.96833	0-1.9906
CYANIDE FREE	ANNUAL	MG/L	Monitor		416	0	0	0-0.027
		KG/DAY	--	--	416	0	0	0-0.4521
		MG/L	Monitor		82	0	0.001	0-7
		KG/DAY	--	--	82	0	0.0178	0-130.28
LEAD TOT REC	ANNUAL	UG/L	Monitor		495	0	9	0-358.7
		KG/DAY	3.40	9.01	495	0	0.14917	0-6.9187
OIL GRSE TOT	ANNUAL	MG/L	Monitor		509	1	7	0-45
		KG/DAY	527	672	509	16.8319	123.785	0-846.52
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		512	960.02	1546	3.42-2153
		KG/DAY	--	--	512	15220.3	27027.7	44.297-34821
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		511	7.34	23	0-66
		KG/DAY	632	1284	511	120.446	388.046	0-902.54
ZINC TOT REC	ANNUAL	UG/L	Monitor		513	119.06	347.65	13.83-737.89
		KG/DAY	7.88	17.7	513	1.89111	5.90037	0.2106-13.416

Table 20. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003604. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=604

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
AMMONIA NH3-N	MAY-OCT	MG/L	Monitor		127	19.9	58.5	0.8-90.7
		KG/DAY	62.4	85.6	127	15.5336	46.9401	1.1567-65.227
	NOV-APR	MG/L	Monitor		108	22.8	58.7	5.2-76
		KG/DAY	81.6	211	108	21.5631	57.5596	2.598-88.65
CONDUIT FLOW	ANNUAL	MGD	Monitor		1670	0.23	0.452	0.003-1.092
CYANIDE TOT	ANNUAL	MG/L	Monitor		98	0.04	1.08	0-21.5
		KG/DAY	7.40	14.8	98	0.02252	0.89462	0-4.0174
		MG/L	Monitor		22	0.02	0.32	0-9.3
		KG/DAY	7.40	14.8	22	0.01158	0.27615	0-4.8577
LEAD PB,TOT	ANNUAL	UG/L	Monitor		45	27	93	0-176
		KG/DAY	0.74	2.22	45	0.01882	0.08364	0-0.152
LEAD TOT REC	ANNUAL	UG/L	Monitor		190	24	66	0-394
		KG/DAY	0.74	2.22	190	0.01902	0.07811	0-0.5712
MANGANES TOT REC	ANNUAL	UG/L	Monitor		46	569	1820	39-2470
		KG/DAY	--	--	46	0.41512	1.18819	0.0252-1.5044
PH MAX	ANNUAL	S.U.	Monitor		607	8.1	8.3	7.3-9.1
PH MAX	ANNUAL	S.U.	Monitor		1063	7.6*	8.4	6.8-9.8
PH MIN	ANNUAL	S.U.	Monitor		607	7.9	8.1	7-8.3
PH MIN	ANNUAL	S.U.	Monitor		1063	6.9*	8	4.8-8.9
PHENOLIC 4AAP TOT	ANNUAL	UG/L	Monitor		56	0	84	0-580
		KG/DAY	0.246	0.493	56	0	0.08342	0-0.1754
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		118	19	48	0-453
		KG/DAY	219	660	118	14.0802	45.5563	0-317.2
ZINC TOT REC	ANNUAL	UG/L	Monitor		178	197	837	0-2670
		KG/DAY	1.00	2.83	178	0.17576	0.9219	0-2.6781
ZINC ZN,TOT	ANNUAL	UG/L	Monitor		61	251	1800	25-3820
		KG/DAY	1.00	2.83	61	0.16424	1.7305	0.017-3.6911

Table 21. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003622. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=622

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	0.68	4	0.032-7.89
LEAD PB,TOT	ANNUAL	UG/L	Monitor		511	0	11	0-71
		KG/DAY	--	--	511	0	0.01132	0-1.0723
OIL GRSE TOT	ANNUAL	MG/L	Monitor		511	0	2.4	0-8.6
		KG/DAY	--	--	511	0	12.7736	0-100.62
MANGANES TOT REC	ANNUAL	UG/L	--	--	130	127	227	0-832
		KG/DAY	--	--	130	0.12218	0.73633	0-4.8087
PH MAX	ANNUAL	S.U.	Monitor		579	7.9	8.4	6.9-8.8
PH MAX	ANNUAL	S.U.	Monitor		1241	7.4*	8.68	7-11.7
PH MIN	ANNUAL	S.U.	Monitor		579	7.8	8.3	6.7-8.5
PH MIN	ANNUAL	S.U.	Monitor		1093	6.9*	8.2	4-8.5
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		511	904	1656	198-3424
		KG/DAY	--	--	511	2294	14536.7	64.451-30372
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		511	6	19	0-93
		KG/DAY	--	--	511	12.7706	226.858	0-640.01
ZINC ZN,TOT	ANNUAL	UG/L	Monitor		511	48	220	0-920
		KG/DAY	--	--	511	0.09669	2.22747	0-11.794

Table 22. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003632. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=632

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
CONDUIT FLOW	ANNUAL	MGD	Monitor		1826	0.68	4	0.032-7.89
LEAD PB,TOT	ANNUAL	UG/L	Monitor		495	0	11	0-71
		KG/DAY	1.64	4.91	495	0	0.03759	0-1.0723
OIL GRSE TOT	ANNUAL	MG/L	Monitor		500	0	2.4	0-8.6
		KG/DAY	84.4	246	500	0	14.0053	0-100.62
RESIDUE DIS-105C	ANNUAL	MG/L	Monitor		511	904	1656	198-3424
		KG/DAY	--	--	511	2294	14536.7	64.451-30372
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		509	6	19	0-93
		KG/DAY	279	817	509	12.7706	229.712	0-640.01
ZINC ZN,TOT	ANNUAL	UG/L	Monitor		505	49	230	0-638
		KG/DAY	2.51	7.44	505	0.0992	2.59246	0-11.794

Table 23. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfalls 3ID00003613 and 3ID00003633. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=613

			CURRENT PERMIT		PERIOD = JAN01 THRU APR04			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
BOD 5 DAY	MAY-OCT	MG/L	Monitor		5	0	14.6	0-14.6
		KG/DAY	--	--	5	0	0.96972	0-0.9697
	NOV-APR	MG/L	Monitor		17	0	4.8	0-5.5
		KG/DAY	--	--	17	0	0.3028	0-0.3634
COD	ANNUAL	MG/L	Monitor		22	33	50	0-64
		KG/DAY	--	--	22	1.52611	30.227	0-36.347
CONDUIT FLOW	ANNUAL	MGD	Monitor		21	0.02	0.242	0.001-0.291
OIL GRSE TOT	ANNUAL	MG/L	Monitor		39	0	0	0-0
PH	ANNUAL	S.U.	Monitor		22	7.2*	8.7	7.2-8.9
RESIDUE TOT NFLT	ANNUAL	MG/L	30	45	40	3	30	0-102
		KG/DAY	--	--	40	0	4.40574	0-54.05
SULFATE SO4	ANNUAL	MG/L	Monitor		22	205	360	36-370
		KG/DAY	--	--	22	14.7161	114.496	0-269.79

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=633

			CURRENT PERMIT		PERIOD = JAN01 THRU APR04			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
BOD 5 DAY	NOV-APR	MG/L	Monitor		12	0	2.6	0-8
		KG/DAY	--	--	12	0	0.06718	0-0.0787
COD	ANNUAL	MG/L	Monitor		12	37	44	0-50
		KG/DAY	--	--	12	1.17335	2.22513	0-4.8338
CONDUIT FLOW	ANNUAL	MGD	Monitor		12	0.008	0.018	0.001-0.0297
OIL GRSE TOT	ANNUAL	MG/L	Monitor		18	0	0	0-0
PH	ANNUAL	S.U.	Monitor		12	7.6*	8.9	7.6-8.9
RESIDUE TOT NFLT	ANNUAL	MG/L	30	45	17	0	6	0-12
		KG/DAY	--	--	17	0	0.20439	0-0.6745
SULFATE SO4	ANNUAL	MG/L	Monitor		12	360	500	75-525
		KG/DAY	--	--	12	11.7184	30.6585	0.2839-39.345

Table 24. Effluent Characterization

Summary of current permit limits and unaltered monthly operating report (MOR) data for ArcelorMittal Cleveland outfall 3ID00003613 AND 3id00003633. 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. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=643

			CURRENT PERMIT		PERIOD = JAN01 THRU JUL05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
BOD 5 DAY	MAY-OCT	MG/L	Monitor		7	6.1	50.2	0-50.2
		KG/DAY	--	--	7	0.19001	5.98454	0-5.9845
	NOV-APR	MG/L	Monitor		11	5.5	50.7	0-54.9
		KG/DAY	--	--	11	0.1042	20.7251	0-62.838
COD	ANNUAL	MG/L	Monitor		19	66	150	23-209
		KG/DAY	--	--	19	7.4943	136.205	0.0871-194.19
CONDUIT FLOW	ANNUAL	MGD	Monitor		19	0.022	0.31086	0.001-0.583
OIL GRSE TOT	ANNUAL	MG/L	Monitor		21	0	2.6	0-14
		KG/DAY	--	--	21	0	2.747	0-10.015
PH	ANNUAL	S.U.	Monitor		19	7.3*	8.8	7.3-9.3
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		21	8	45	0-49
		KG/DAY	--	--	21	0.07948	56.0846	0-63.993
SULFATE SO4	ANNUAL	MG/L	Monitor		19	85	125	35-475
		KG/DAY	--	--	19	23.4367	147.076	0.1325-209.63

ArcelorMittal CLEVELAND (3ID00003) OUTFALL=653

			CURRENT PERMIT		PERIOD = JAN01 THRU DEC05			
PARAMETER	**SEASON**	**UNITS**	**30 DAY**	**DAILY**	**N**	**50 PCTL**	**95 PCTL**	**RANGE**
BOD 5 DAY	MAY-OCT	MG/L	Monitor		29	3.4	37.5	0-40.4
		KG/DAY	--	--	29	0.15594	2.47728	0-3.0517
	NOV-APR	MG/L	Monitor		30	5.9	19.3	0-40.8
		KG/DAY	--	--	30	0.23316	2.38315	0-7.5052
COD	ANNUAL	MG/L	Monitor		60	52	80	0-133
		KG/DAY	--	--	60	2.16502	24.4655	0-38.929
CONDUIT FLOW	ANNUAL	MGD	Monitor		60	0.014	0.1026	0.0004-0.216
OIL GRSE TOT	ANNUAL	MG/L	Monitor		245	0	0	0-8
		KG/DAY	--	--	245	0	0	0-0.0777
PH	ANNUAL	S.U.	Monitor		60	7.3*	8.9	7-9.9
RESIDUE TOT NFLT	ANNUAL	MG/L	Monitor		104	4	27	0-90
		KG/DAY	--	--	104	0	4.0878	0-30.435
SULFATE SO4	ANNUAL	MG/L	Monitor		60	85	265	45-1550
		KG/DAY	--	--	60	4.09915	42.4677	0-87.121

Table 25. Summary of ACUTE toxicity test results on the ArcelorMittal Cleveland effluent from outfall 3ID00003002.

TEST DATE(a)	*Ceriodaphnia dubia 48 hour*						*Fathead Minnows 48 hour*					
	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]
01/16/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
04/22/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
07/24/02 (E)	NT	NR	>100	5	<1.0	NT	NT	NR	>100	10	<1.0	NT
10/08/02 (E)	NT	NR	>100	5	<1.0	NT	NT	NR	>100	15	<1.0	NT
01/14/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	10	<1.0	NT
04/23/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
07/29/03 (E)	NT	NR	>100	10	<1.0	NT	NT	NR	>100	5	<1.0	NT
10/22/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
01/13/04 (E)	NT	NR	91	>50	1.1	NT	NT	NR	>100	30	<1.0	NT
04/19/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	35	<1.0	NT
07/19/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	30	<1.0	NT
10/15/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	56	>50	1.8	NT

[a] O = EPA test; E = entity test
[b] UP = upstream control water
[c] C = laboratory water control
[d] LC_{50} = Median Lethal Concentration
[e] EC_{50} = Median effects concentration
NR = not reported in OEPA data base

[f] %A = Percent Adversely Affected in 100% effluent
[g] TUa = Acute Toxicity Units
[h] NF = Near Field Sample In the Cuyahoga River
[i] %M = Percent Mortality in 100% effluent
ND = not determined
NT = not tested

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Table 25. Summary of ACUTE toxicity test results on the ArcelorMittal Cleveland effluent from outfall 3ID00003002 - continued.

TEST DATE(a)	*Ceriodaphnia dubia 48 hour*						*Fathead Minnows 48 hour*					
	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]
01/20/05 (E)	NT	NR	>100	20	<1.0	NT	NT	NR	>100	0	<1.0	NT
04/06/05 (E)	NT	NR	>100	15	<1.0	NT	NT	NR	>100	5	<1.0	NT
06/21/05 (O)	0	0-10	85.6	100	1.16	0	0	0	>100	0-5	<1.0	0
07/26/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
08/30/05 (O)	0	0	>100	45	<1.0	NT	0	0	>100	0-5	<1.0	0
10/05/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
01/18/06 (E)	NT	NR	>100	15	<1.0	NT	NT	NR	>100	10	<1.0	NT
04/20/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
07/12/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
10/18/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	25	<1.0	NT

[a] O = EPA test; E = entity test
[b] UP = upstream control water
[c] C = laboratory water control
[d] LC_{50} = Median Lethal Concentration
[e] EC_{50} = Median effects concentration
NR = not reported in OEPA data base

[f] %A = Percent Adversely Affected in 100% effluent
[g] TUa = Acute Toxicity Units
[h] NF = Near Field Sample In the Cuyahoga River
[i] %M = Percent Mortality in 100% effluent
ND = not determined
NT = not tested

Table 26 Summary of ACUTE toxicity test results on the ArcelorMittal Cleveland effluent from outfall 3ID00003005.

TEST DATE(a)	*Ceriodaphnia dubia 48 hour*						*Fathead Minnows 48 hour*					
	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]
01/16/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
04/30/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	6	<1.0	NT
07/24/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	20	<1.0	NT
10/25/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	20	<1.0	NT
01/14/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
04/25/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	3	<1.0	NT
07/29/03 (E)	NT	NR	>100	10	<1.0	NT	NT	NR	>100	5	<1.0	NT
10/24/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	16	<1.0	NT
01/13/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
04/19/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
07/19/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
10/15/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	8	<1.0	NT
01/26/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
04/06/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
07/26/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
10/05/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	25	<1.0	NT
01/18/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	10	<1.0	NT
04/20/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
07/12/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
10/18/06 (E)	NT	NR	36	0	2.8	NT	NT	NR	>100	0	<1.0	NT

[a] O = EPA test; E = entity test
[b] UP = upstream control water
[c] C = laboratory water control
[d] LC_{50} = Median Lethal Concentration
[e] EC_{50} = Median effects concentration
NR = not reported in OEPA data base
[f] %A = Percent Adversely Affected in 100% effluent
[g] TUa = Acute Toxicity Units
[h] NF = Near Field Sample In N/A
[i] %M = Percent Mortality in 100% effluent
ND = not determined
NT = not tested

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Table 27. Summary of ACUTE toxicity test results on the ArcelorMittal Cleveland effluent from outfall 3ID00003022.

TEST DATE(a)	*Ceriodaphnia dubia 48 hour*						*Fathead Minnows 48 hour*					
	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]
05/23/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
06/11/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
07/24/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
08/14/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
09/17/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
10/21/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
11/13/02 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
12/10/02 (E)	NT	NR	>100	5	<1.0	NT	NT	NR	>100	10	<1.0	NT
01/04 /03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
04/23/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
07/29/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
10/22/03 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
01/13/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
04/19/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
07/19/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
10/15/04 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
01/20/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	10	<1.0	NT

[a] O = EPA test; E = entity test
[b] UP = upstream control water
[c] C = laboratory water control
[d] LC_{50} = Median Lethal Concentration
[e] EC_{50} = Median effects concentration
NR = not reported in OEPA data base

[f] %A = Percent Adversely Affected in 100% effluent
[g] TUa = Acute Toxicity Units
[h] NF = Near Field Sample In N/A
[i] %M = Percent Mortality in 100% effluent
ND = not determined
NT = not tested

Table 27. Summary of ACUTE toxicity test results on the ArcelorMittal Cleveland effluent from outfall 3ID00003022 - continued..

TEST DATE(a)	*Ceriodaphnia dubia 48 hour*						*Fathead Minnows 48 hour*					
	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]	UP[b]	C[c]	LC_{50}[d]	%M[i]	TUa[g]	NF[h]
04/06/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
07/26/05 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT
10/05/05 (E)	NT	NR	>100	5	<1.0	NT	NT	NR	>100	10	<1.0	NT
01/18/06 (E)	NT	NR	24	>50	4.1	NT	NT	NR	>100	5	<1.0	NT
04/20/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	5	<1.0	NT
07/12/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	15	<1.0	NT
10/18/06 (E)	NT	NR	>100	0	<1.0	NT	NT	NR	>100	0	<1.0	NT

[a] O = EPA test; E = entity test
[b] UP = upstream control water
[c] C = laboratory water control
[d] LC_{50} = Median Lethal Concentration
[e] EC_{50} = Median effects concentration
NR = not reported in OEPA data base

[f] %A = Percent Adversely Affected in 100% effluent
[g] TUa = Acute Toxicity Units
[h] NF = Near Field Sample In N/A
[i] %M = Percent Mortality in 100% effluent
ND = not determined
NT = not tested

Table 28. Summary of the aquatic life use attainment status for the Warmwater Habitat use designation in Cuyahoga River, lacustuary (RM 7.0-0.0), and navigation channel (RM 5.6-0.0) based on data collected by the Ohio EPA from June through September 1984-2000.

RIVER MILE Fish/Macro.	IBI	Mod. Iwb	ICI	QHEI	Use Attain-Ment Status	Comments
Cuyahoga River (2000)						
Erie-Ontario Lake Plain - WWH Use Designation (Existing)						
7.2/7.1	26*	7.5*	42	63.0	PARTIAL	Dst. Big Creek
Lake Erie Lacustuary (Interim Biocriteria - WWH Use designation (Existing)						
6.2/--	6*	4.1*	--	--	NON	Ust. Navigation Channel
Cuyahoga River (1996)						
Erie/Ontario Lake Plain - WWH Use Designation (Existing)						
7.2/7.1	14*	4.0*	24*	68.5	**NON**	Dst. Big Creek
Lake Erie Lacustuary (Interim Biocriteria) - WWH Use Designation (Existing)						
7.0/ --	13*	5.5*	--	77.5	**NON**	Dst. Big Creek
5.6/5.8	21*	5.8*	40*	41.5	**NON**	Dst LTV, ust. Nav. Channel
*Navigation Channel (Interim Biocriteria) - LRW Use Designation (Existing) (All Scores **Very Poor** = **NON** Attainment)*						
4.8/5.0	18*	**4.7***	28*	--	PARTIAL	Dst. LTV
4.2/4.3	31*	5.8*	14*	33.0	FULL	Dst. LTV
3.1/3.3	22*	**4.8***	**10***	33.0	PARTIAL	Dst. LTV & Kingsbury Run
1.3/1.2	21*	**4.8***	**10***	40.0	PARTIAL	Ust. Detroit Ave.
0.5/ --	24*	5.2*	--	32.0	(FULL)	Near mouth
Cuyahoga River (1994)						
Lake Erie Lacustuary - WWH						
7.0/6.9	14*	5.3*	36*	69.5	**NON**	Dst. Big Creek
-- /6.6	--	--	34*	--	**(NON)**	Dst. LTV
Navigation Channel - LRW						
4.8/5.0	19*	5.5*	22*	31.0	FULL	Dst. LTV
0.2/0.5	22*	4.9*	22*	--	FULL	Near mouth
Cuyahoga River (1991)						
Erie/Ontario Lake Plain - WWH						
7.1/7.1	21*	6.9*	34	73.5	**NON**	Dst. Big Creek
Lake Erie Lacustuary - WWH						
5.8/5.8	14*	5.1*	38*	55.5	**NON**	Ust. Nav. Channel
Navigation Channel - LRW						
5.0/5.0	20*	5.2*	14*	27.0	FULL	Dst. LTV
3.3/3.3	**14***	5.5*	14*	25.0	PARTIAL	Dst. LTV & Kingsbury Run
1.4/1.2	**16***	5.4*	**12***	48.0	PARTIAL	Ust. Detroit Ave.
Cuyahoga River (1988)						
Lake Erie Lacustuary - WWH						
6.8/6.7 east	15*	5.1*	38*	NA	**NON**	Lower Harvard Ave.
6.8/6.7 west	15*	5.1*	46	NA	PARTIAL	Lower Harvard Ave.

Table 28. (continued).

RIVER MILE Fish/Invert.	IBI	Modified MIwb	ICI[a]	QHEI[b]	Attainment Status[c]	Comment
Cuyahoga River (1988) *continued*						
-- /5.8 east	--	--	32*	--	(**NON**)	Ust. Nav. Channel
-- /5.7 west	--	--	38*	--	(**NON**)	Ust. Nav. Channel
			Navigation Channel - LRW			
5.6/5.6	18*	**4.9***	22*	NA	PARTIAL	Dst. N&SS RR Bridge
5.1/5.3	**14***	**4.1***	20*	NA	PARTIAL	Dst. LTV
3.4/4.0	**10***	**4.7***	16*	NA	PARTIAL	Dst. LTV & Kingsbury Run
1.4/1.2	**16***	**3.6***	--	NA	(**NON**)	Detroit Ave.
0.8/ --	**13***	**3.4***	--	NA	(**NON**)	@ "The Flats"
Cuyahoga River (1987)						
			Erie/Ontario Lake Plain - WWH			
7.1/ --	17*	4.4*	--	48.0	**NON**	Dst. Big Creek
			Lake Erie Lacustuary - WWH			
6.8/6.7 east	**11***	**3.2***	34*	52.5	**NON**	Lower Harvard Ave.
6.8/6.7 west	**11***	**3.2***	36*	--	**NON**	Lower Harvard Ave.
-- /5.7 west	--	--	26*	--	(**NON**)	Dst. LTV; Ust. Nav. Channel
			Navigation Channel - LRW			
5.5/ --	**12***	5.1*	--	34.5	PARTIAL	Dst. N&SS RR Bridge
5.0/5.0	**9***	**3.4***	**10***	20.0	**NON**	Dst. LTV
3.4/ --	**3***	**1.6***	--	20.0	(**NON**)	Dst. LTV & Kingsbury Run
1.4/1.2	**12***	**3.4***	16*	NA	PARTIAL	Detroit Ave.
0.8/ --	**9***	**2.7***	--	36.0	(**NON**)	@ "The Flats"
Cuyahoga River (1984)						
			Erie/Ontario Lake Plain - WWH			
7.1/7.1	16*	4.2*	P*	43.0	**NON**	Dst. Big Creek
			Navigation Channel - LRW			
5.1/ --	**11***	**4.1***	--	20.0	(**NON**)	Dst. LTV
3.4/ --	**5***	**2.3***	--	22.0	(**NON**)	Dst. LTV & Kingsbury Run
1.5/ --	**1***	**0***	--	23.0	(**NON**)	Ust. Detroit Ave.
0.8/ --	**0***	**0***	--	26.5	(**NON**)	@ "The Flats"

* - significant departure from interim biocriteria; poor and very poor results are underlined. Very poor results from the Navigation Channel are in **BOLD**.

ns - nonsignificant departure from interim biocriteria for WWH or EWH (4 IBI or ICI units; 0.5 MIwb units)

a - Narrative evaluation used in lieu of ICI when artificial substrate samplers were lost (P=Poor). (Does not include lacustuary samples)

b - Qualitative Habitat Evaluation Index (QHEI) values based on the new version (Rankin 1989).

c - Attainment status based on one organism group is parenthetically expressed.

Table 28. (continued).

Ecoregion Biocriteria: Erie-Ontario Lake Plain (EOLP) and Lake Erie Lacustuaries[d]

INDEX - Site Type	WWH	EWH	MWH[e]	L Erie Lacustuary RMs 7.0-5.6 (WWH/EWH)	Navigation Channel RMs 5.6-0.0 (LRW)[f]
IBI - Boat	40	48	24	42/50	>17
Mod. Iwb - Boat	8.7	9.6	5.8	8.5/9.5	>5.0
ICI	34	46	22	42/50	14

[d] - Lake Erie lacustuary communities are evaluated using an alternative set of metric scoring criteria based on sampling from other flooded river mouths in the drainage. Excepting Attainment/Non Attainment status, the scores are not directly comparable to biocriteria for lotic streams and rivers.

[e] - Modified Warmwater Habitat for channel modified areas.

[f] - The use designation for the navigation channel between June and January is Limited Resource Water. The criteria listed exceed "Very Poor" conditions.

Table 29. Effluent data for ArcelorMittal-Cleveland Steel.

Parameter [B]	units	# samples	# >MDL	PEQ average	PEQ maximum
Outfall 001 (RM 6.82)					
Self-monitoring (SWIMS) data:					
Ammonia (summer)	mg/L	17	16	1.6944	2.8577
Ammonia (winter)	mg/L	12	9	0.97095	1.6621
Form 2C data:					
Barium	µg/L	1	1	471	645
Benzene [B]	µg/L	2	1	129	176
Boron	µg/L	1	1	1109	1519
Fluoride	mg/L	1	1	8.60	11.78
Iron	µg/L	1	1	12039	16492
Manganese, TR	µg/L	1	1	2114	2895
Molybdenum	µg/L	1	1	158	217
Sulfate	mg/L	1	1	2186	2995
Zinc, TR	µg/L	5	1	138	189
Outfall 002 (RM 6.68)					
Self-monitoring (SWIMS) data:					
1,2,4-Trimethylbenzene	µg/L	50	1	4.38	6
Ammonia (summer)	mg/L	18	16	0.6425	0.98997
Ammonia (winter)	mg/L	11	6	0.77386	1.4764
Barium	µg/L	50	50	153.63	241.25
Dissolved Solids	mg/L	210	210	1385.3	1703.8
Manganese, TR	µg/L	35	34	99.344	148.61
Strontium	µg/L	50	50	758.62	1049.4
Tetrachloroethylene [C]	µg/L	0	0	--	--
Zinc, TR	µg/L	420	417	325.28	573.59
Ohio EPA and Form 2C data:					
Aluminum	µg/L	3	1	430.0	589
Antimony	µg/L	1	1	76.9	105
Boron	µg/L	1	1	402.8	552
Chloride	mg/L	2	2	857.2	1174
Chloroform [B]	µg/L	3	2	1.97	2.70
Chloromethane [B]	µg/L	3	1	2.16	2.96
Cyanide, *total*	mg/L	3	1	0.017	0.023
Fluoride	mg/L	1	1	3.80	5.21
Iron	µg/L	3	3	1141	1563

[A] TR=total recoverable
[B] Carcinogen
[C] Parameter lacks effluent monitoring data but an allocation was requested by Permits Section.

Table 29 (continued). Effluent data for ArcelorMittal-Cleveland Steel.

Parameter [A]	units	# samples	# >MDL	PEQ average	PEQ maximum
Outfall 002 (RM 6.68) (continued)					
Ohio EPA and Form 2C data:					
Lead, TR	µg/L	3	1	8.0	11.0
Magnesium	mg/L	3	3	32.85	45.00
Molybdenum	µg/L	1	1	131	180
Naphthalene	µg/L	3	1	1.5	2.09
Nitrate+Nitrite-N	mg/L	3	3	19.67	26.94
Phosphorus, total	mg/L	3	3	0.8	1
Potassium	µg/L	2	2	22	30
Sulfate	mg/L	1	1	760	1042
Outfall 005 (RM 5.39)					
Self-monitoring (SWIMS) data:					
Ammonia (February-May)	mg/L	65	65	1.1205	1.6077
Ammonia (summer)	mg/L	76	73	1.0612	1.4681
Ammonia (winter)	mg/L	45	45	1.278	1.8446
Bis (2-ethylhexyl) phthalate [B]	µg/L	48	7	5.295	7.3818
Chlorine, total residual	mg/L	208	37	0.018699	0.025878
Cyanide, free	mg/L	210	3	0.03577	0.049
Dissolved Solids	mg/L	209	209	873.3	1144.6
Lead, TR	µg/L	50	9	11.309	17.116
Manganese, TR	µg/L	50	50	166.4	225.95
Zinc, TR	µg/L	210	208	71.519	99.107
Form 2C data:					
Aluminum	µg/L	1	1	17470	23932
Barium	µg/L	1	1	253	347
Boron	µg/L	1	1	290	397
Copper, TR	µg/L	9	2	18	25
Fluoride	mg/L	1	1	1.54	2.11
Iron	µg/L	1	1	28197	38626
Magnesium	mg/L	1	1	61.6	84.3
Molybdenum	µg/L	1	1	81	112
Nitrate+Nitrite-N	mg/L	1	1	5.75	7.87
Phenolics, total	µg/L	1	1	27	37
Sulfate	mg/L	1	1	312	428
Titanium	µg/L	1	1	208	285

[A] TR=total recoverable
[B] Carcinogen

Table 29 (continued). Effluent data for ArcelorMittal-Cleveland Steel.

Parameter [A]	units	# samples	# >MDL	PEQ average	PEQ maximum
Outfall 014 (RM 4.81)					
Self-monitoring (SWIMS) data:					
Ammonia (February-May)	mg/L	66	62	1.113	1.6506
Ammonia (summer)	mg/L	76	71	1.0234	1.4604
Ammonia (winter)	mg/L	50	49	0.86442	1.1883
Chlorine, total residual	mg/L	228	41	0.013183	0.021004
Suspended Solids	mg/L	209	203	118.17	176.17
Dissolved Solids	mg/L	209	209	897.5	1187
Ohio EPA and Form 2C data:					
Copper, TR	µg/L	9	2	17	23
Zinc, TR	µg/L	5	5	80	110
Outfall 017 (RM 4.7)					
Self-monitoring (SWIMS) data:					
Chlorine, total residual	mg/L	209	25	0.010759	0.015489
Dissolved Solids	mg/L	209	209	1367.8	1683
Suspended Solids	mg/L	209	107	10.338	15.341
Lead, TR	µg/L	420	33	7.354	12.406
Molybdenum	µg/L	210	210	3173.2	4403.9
Zinc, TR	µg/L	420	420	154.14	235.48
Form 2C data:					
Antimony	µg/L	1	1	145	198
Aluminum	µg/L	1	1	3168	4340
Barium	µg/L	1	1	724	992
Boron	µg/L	1	1	928	1271
Fluoride	mg/L	1	1	148.23	203.05
Iron	µg/L	1	1	2869	3931
Magnesium	mg/L	1	1	56.1	76.9
Manganese, TR	µg/L	1	1	95	130
Phosphorus, total	mg/L	1	1	3.17	4.34
Sulfate	mg/L	1	1	860	1178

[A] TR=total recoverable

Table 29 (continued). Effluent data for ArcelorMittal-Cleveland Steel.

Parameter [A]	units	# samples	# >MDL	PEQ average	PEQ maximum
Outfall 022 (RM 5.9)					
Self-monitoring (SWIMS) data:					
Chlorine, total residual	mg/L	107	0	--	--
Cyanide, free	mg/L	217	3	0.1022	0.14
Dissolved Solids	mg/L	216	215	896.6	1159.2
Lead, TR	µg/L	217	29	8.5006	14.626
Manganese, TR	µg/L	253	253	128.29	188.67
Selenium, TR	µg/L	27	2	34.16	46.8
Zinc, TR	µg/L	217	209	65.132	105.36
Form 2C data:					
Aluminum	µg/L	1	1	489	670
Barium	µg/L	1	1	86	118
Boron	µg/L	1	1	466	639
Copper, TR	µg/L	1	1	45	62
Fluoride	mg/L	1	1	27.11	37.14
Iron	µg/L	1	1	2793	3825
Magnesium	mg/L	1	1	59.3	81.2
Manganese, TR	µg/L	1	1	235	322
Molybdenum	µg/L	1	1	118	161
Nitrate+Nitrite-N	mg/L	1	1	8.74	11.97
Sulfate	mg/L	1	1	738	1011
Outfall 023 (Burke Br; RM 5.39)					
Self-monitoring (SWIMS) data:					
Suspended Solids	mg/L	52	27	109.54	123.62
Sulfate	mg/L	46	46	1056.4	1378.6
Zinc, TR	µg/L	50	50	214.39	344.84
Form 2C data:					
Aluminum	µg/L	1	1	217	298
Ammonia (summer)	mg/L	0	0	--	--
Ammonia (winter)	mg/L	1	1	20.37	27.9
Barium	µg/L	1	1	100	136
Boron	µg/L	1	1	1027	1407
Copper, TR	µg/L	7	1	26	36
Fluoride	mg/L	1	1	5.75	7.87
Iron	µg/L	1	1	846	1159
Magnesium	mg/L	1	1	149.4	204.6
Manganese, TR	µg/L	1	1	95	130
Molybdenum	µg/L	1	1	222	304
Nitrate+Nitrite-N	mg/L	1	1	1.27	1.74
Phosphorus, total	mg/L	1	1	1.63	2.23

[A] TR=total recoverable

Table 29 (continued). Effluent data for ArcelorMittal-Cleveland Steel.

Parameter [A]	units	# samples	# >MDL	PEQ average	PEQ maximum
Outfall 024 (RM 5.65)					
Self-monitoring (SWIMS) data:					
Aluminum [B]	µg/L	0	0	--	--
Iron [B]	µg/L	0	0	--	--
Nitrate+Nitrite-N [B]	mg/L	0	0	--	--
Zinc, TR	µg/L	204	179	70.435	106.26

[A] TR=total recoverable
[B] WLA requested by permit section.

Table 30a. Water quality criteria in the study area.

Parameter [D]	Units	Outside Mixing Zone Criteria: Average: Human Health [A]	Average: Wildlife	Average: Agriculture [F]	Aquatic Life [A]	Maximum Aquatic Life [A]	Inside Mixing Zone Maximum [A]
1,2,4-Trimethylbenzene	µg/L	86 [C]	--	--	15 [B]	140 [B]	280 [B]
Aluminum	µg/L	4,500 [B]	--	--	--	--	--
Antimony	µg/L	780	--	--	190 [B]	900 [B]	1,800 [B]
Barium	µg/L	160,000	--	--	220 [B]	2,000 [B]	4,000 [B]
Benzene	µg/L	310	--	--	160 [B]	700 [B]	1,400 [B]
Bis (2-ethylhexyl) phthalate	µg/L	32	--	--	8.4 [B]	1,100 [B]	2,100 [B]
Boron	µg/L	200,000	--	--	950 [B]	8,500 [B]	17,000 [B]
Cadmium, TR	µg/L	730	--	50		see Table 3c	
Chlorine, total residual	µg /L	*ID*	--	--	11	19	38
Chloroform	µg/L	1,700	--	--	140 [B]	1,300 [B]	2,600 [B]
Chloromethane	µg/L	7,300 [B]	--	--	--	--	--
Chromium, TR	µg/L	14,000	--	100		see Table 3c	
Copper, TR	µg/L	64,000	--	500		see Table 3c	
Cyanide, free	mg/L	48	--	--	0.0052	0.022	0.044
Cyanide, *total*	mg/L	48	--	--	--	--	--
Dissolved Solids	mg/L	*ID*	--	--	1,500	*ID*	*ID*
Fluoride	µg /L	*ID*	--	2,000	--	--	--
Iron	µg/L	--	--	5,000	--	--	--
Lead, TR	µg/L	*ID*	--	100		see Table 3c	
Manganese, TR	µg/L	61,000	--	--	--	--	--
Mercury [E], TR	µg/L	0.0031	0.0013	10	0.91	1.7	3.4
Molybdenum	µg/L	10,000	--	--	20,000 [B]	190,000 [B]	370,000 [B]
Naphthalene	µg/L	1,200	--	--	21 [B]	170 [B]	340 [B]
Nickel, TR	µg/L	43,000	--	200		see Table 3c	
Nitrate+Nitrite-N	mg/L	*ID*	--	100	--	--	--
Selenium, TR	µg/L	3,100	--	50	5.0	--	--
Silver, TR	µg/L	11,000	--	--		see Table 3c	
Strontium	µg/L	1,400,000	--	--	5,300 [B]	48,000 [B]	95,000 [B]
Tetrachloroethylene	µg/L	1,800	--	--	53 [B]	430 [B]	850 [B]
Zinc, TR	µg/L	35,000	--	25,000		see Table 3c	

[A] Human Health and Aquatic Life criteria are Tier I unless otherwise indicated.
[B] Tier II criterion.
[C] Screening Value criterion.
[D] TR=total recoverable.
[E] Bio-accumulative chemical of concern (BCC).
[F] Agricultural water supply use-designation applies to outfalls 001, 002, 022, 023, and 024.

Table 30b. Water quality criteria for ammonia.

Location	Outfall(s)	Season	Average Aquatic Life[B]	Maximum Aquatic Life[B]
Cuyahoga R DST Southerly WWTP	Southerly WWTP 001	Summer	1.8	12.9
		Winter	7.1	13
Cuyahoga R @ Ship Channel Boundary (from RM 10.57 to RM 5.6)	ArcelorMittal 001, ArcelorMittal 002	Summer	1.1	10.35
		Winter	4.2	11.7
Cuyahoga R @ W 3rd St (from RM 5.6 to RM 3.26)	ArcelorMittal 005, ArcelorMittal 014	Summer	--	12.8
		Winter	--	11.7
		February-May[A]	2.1	12.9
Burke Br [C]	ArcelorMittal 023	Summer	--	12.8
		Winter	--	11.7

[A] During fish passage condition.
[B] All units are mg/L.
[C] Aquatic life use designation for Burke Branch is limited resource water.

Table 30c. Hardness- and DMT-dependent water quality criteria [A,B].

		Hardness [J] (mg/L)	Cadmium	Chromium	Copper	Lead	Nickel	Silver	Zinc
ArcelorMittal-Cleveland Steel									
DMT	ArcelorMittal 001 [H] ArcelorMittal 002 [H]	--	<1 [D]	1.13	1.22	4.05	1.06	--	1.06
	all other ArcelorMittal outfalls	--	-- [C]	1.43	1.36	10.58	1.09	--	1.1
OMZA	ArcelorMittal 001 ArcelorMittal 002	227	4.7	170	22 [F]	58 [F]	110 [F]	1.3	240
	ArcelorMittal 022 ArcelorMittal 024	223	4.6	200 [F]	24 [F]	149 [F]	110 [F]	1.3	260 [F]
OMZA – FPC [G]	ArcelorMittal 005 ArcelorMittal 014 ArcelorMittal 017	226	4.7	210 [F]	24 [F]	152 [F]	110 [F]	1.3	260 [F]
OMZM	ArcelorMittal 001 ArcelorMittal 002	227	11	3500	35 [F]	1110 [F]	990 [F]	6.5	240
	ArcelorMittal 005 ArcelorMittal 014 ArcelorMittal 017 ArcelorMittal 022 ArcelorMittal 023	223	11	3500	39 [F]	2840 [F]	1010 [F]	6.3	250 [F]

	Arcelor Mittal 024								
IMZM	Arcelor Mittal 001	223	22	7000	78 [F]	5690 [F]	2000 [F]	13	510 [F]
	Arcelor Mittal 002	412 [E]	43	11000	135 [F]	12000 [F]	3300 [F]	35	830 [F]
	Arcelor Mittal 005	243	25	7500	84 [F]	6340 [F]	2200 [F]	15	550 [F]
	Arcelor Mittal 014	226	23	7000	79 [F]	5780 [F]	2000 [F]	13	510 [F]
	Arcelor Mittal 017	202	20	6400	71 [F]	5010 [F]	1900 [F]	11	470 [F]
	Arcelor Mittal 022	280	29	8400	96 [F]	7600 [F]	2400 [F]	19	620 [F]
	Arcelor Mittal 023	223	22	7000	78 [F]	5690 [F]	2000 [F]	13	510 [F]
	Arcelor Mittal 024	196	19	6300	69 [F]	4830 [F]	1800 [F]	10	460 [F]
Southerly WWTP									
DMT		--	<1 [D]	1.13	1.22	4.05	1.06	--	1.06
OMZA		227	4.7	170	22 [F]	58 [F]	110 [F]	1.3	240
OMZM		227	11	3500	35 [F]	1110 [F]	990 [F]	6.5	240
IMZM		227	23	7100	71 [F]	2230 [F]	2000 [F]	13	480

[A] Hardness and DMT (when applicable) factors have been incorporated into values presented.
[B] All units are µg/L unless otherwise specified.
[C] DMT measurement has a large probable error and is not used.
[D] DMT measurement <1 and is not used.
[E] Criteria calculations are applicable only for hardness values up to 400; therefore, a value of 400 was used for these calculations.
[F] Effective total recoverable criterion; effective criterion = DMT*dissolved criterion .
[G] FPC=fish passage condition
[H] DMT developed for Southerly WWTP applied to ArcelorMittal 001 and ArcelorMittal 002 outfalls.
[J] Basis (source) for hardness described in Table 4.

Table 31. Instream conditions and discharger (facility) flow.

Parameter	Units	Period	Value	Source
Upstream Design Flow				
Cuyahoga River just UST Southerly WWTP (includes Cuyahoga R @ Independence, Mill Ck, West Ck, and intervening drainage, and canal overflow [7 cfs])				
$_1Q_{10}$	cfs	annual	98.3	USGS gauge #04208000; 1957-2006
$_7Q_{10}$	cfs	annual	117.3	USGS gauge #04208000; 1957-2006
$_7Q_{10}$ (summer)	cfs	May-Nov	117.3	USGS gauge #04208000; 1957-2006
$_7Q_{10}$ (winter)	cfs	Dec-Feb	204.5	USGS gauge #04208000; 1957-2006
$_{30}Q_{10}$ (summer)	cfs	May-Nov	144.6	USGS gauge #04208000; 1957-2006
$_{30}Q_{10}$ (winter)	cfs	Dec-Feb	268.6	USGS gauge #04208000; 1957-2006
$_{90}Q_{10}$	cfs	annual	185.6	USGS gauge #04208000; 1957-2006
HMF	cfs	annual	446.2	USGS gauge #04208000; 1957-2006
FPC	cfs	Feb-May	745.6	USGS gauge #04208000; 1957-2006
Big Creek @ mouth (includes Big Ck @ Cleveland and intervening drainage)				
$_1Q_{10}$	cfs	annual	3.8	USGS gauge #04208502; 1972-86
$_7Q_{10}$	cfs	annual	5.3	USGS gauge #04208502; 1972-86
$_7Q_{10}$ (summer)	cfs	May-Nov	5.3	USGS gauge #04208502; 1972-86
$_7Q_{10}$ (winter)	cfs	Dec-Feb	10.7	USGS gauge #04208502; 1972-86
$_{30}Q_{10}$ (summer)	cfs	May-Nov	12.8	USGS gauge #04208502; 1972-86
$_{30}Q_{10}$ (winter)	cfs	Dec-Feb	13.8	USGS gauge #04208502; 1972-86
$_{90}Q_{10}$	cfs	annual	21.3	USGS gauge #04208502; 1972-86
HMF	cfs	annual	22.7	USGS gauge #04208502; 1972-86
FPC	cfs	Feb-May	26.7	USGS gauge #04208502; 1972-86
Morgana Run @ mouth				
$_1Q_{10}$	cfs	annual	0.21	USGS gauge #04208502; 1972-86
$_7Q_{10}$	cfs	annual	0.29	USGS gauge #04208502; 1972-86
$_7Q_{10}$ (summer)	cfs	May-Nov	0.29	USGS gauge #04208502; 1972-86
$_7Q_{10}$ (winter)	cfs	Dec-Feb	0.58	USGS gauge #04208502; 1972-86
$_{30}Q_{10}$ (summer)	cfs	May-Nov	0.70	USGS gauge #04208502; 1972-86
$_{30}Q_{10}$ (winter)	cfs	Dec-Feb	0.75	USGS gauge #04208502; 1972-86
$_{90}Q_{10}$	cfs	annual	1.16	USGS gauge #04208502; 1972-86
HMF	cfs	annual	1.24	USGS gauge #04208502; 1972-86
FPC	cfs	Feb-May	1.45	USGS gauge #04208502; 1972-86
Burke Branch @ mouth				
$_1Q_{10}$	cfs	annual	0.45	USGS gauge #04208502; 1972-86
$_7Q_{10}$	cfs	annual	0.62	USGS gauge #04208502; 1972-86
$_7Q_{10}$ (summer)	cfs	May-Nov	0.62	USGS gauge #04208502; 1972-86
$_7Q_{10}$ (winter)	cfs	Dec-Feb	1.25	USGS gauge #04208502; 1972-86
$_{30}Q_{10}$ (summer)	cfs	May-Nov	1.50	USGS gauge #04208502; 1972-86
$_{30}Q_{10}$ (winter)	cfs	Dec-Feb	1.62	USGS gauge #04208502; 1972-86
$_{90}Q_{10}$	cfs	annual	2.50	USGS gauge #04208502; 1972-86
HMF	cfs	annual	2.66	USGS gauge #04208502; 1972-86
FPC	cfs	Feb-May	3.13	USGS gauge #04208502; 1972-86

HMF = harmonic mean flow
FPC = fish passage condition

Table 31 (continued). Instream conditions and discharger (facility) flow.

Parameter	Units	Period	Value	Source
Mixing Assumption				
average	percent		25.0	Chronic default criterion (Lake Erie basin).
maximum	percent		100.0	Stream-to-discharge ratio.
NH_3 average	percent		100.0	Stream-to-discharge ratio.
Discharger (Facility) Flow				
Southerly WWTP	cfs	I	270.8	Design flow.
ArcelorMittal 001	cfs	I	0.178	Form 2C application (max 30-d avg).
ArcelorMittal 002	cfs	I	8.0	SWIMS, 48 values, 95th pct, Jun02-May06
ArcelorMittal 005	cfs	I	67.8	SWIMS, 48 values, 95th pct, Jun02-May06
ArcelorMittal 014	cfs	I	55.7	SWIMS, 48 values, 95th pct, Jun02-May06
ArcelorMittal 017	cfs	I	0.902	SWIMS, 48 values, 95th pct, Jun02-May06
ArcelorMittal 022	cfs	I	4.7	SWIMS, 25 values, 95th pct, May04-May06
ArcelorMittal 023	cfs	I	0.324	SWIMS, 48 values, 95th pct, Jun02-May06
ArcelorMittal 024	cfs	I	0.497	SWIMS, 367 values, 95th pct, Jun02-Jul06
ArcelorMittal 800 (intake)	cfs	I	8.2	Equivalent to discharge sum (001 and 002).
ArcelorMittal 801 (intake)	cfs	I	67.818	Equivalent to discharge (005).
ArcelorMittal 804 (intake)	cfs	I	0.902	Equivalent to discharge (017).
ArcelorMittal 806 (intake)	cfs	I	5.166	Equivalent to discharge sum (022 and 024).
ArcelorMittal 808 (intake)	cfs	I	55.7	Equivalent to discharge (014).

I: instantaneous flow measurement

Table 31 (continued). Instream conditions and discharger (facility) flow.

Source of Hardness Determinations

Zone	Facility	Value [A]	Period	Source
OMZA	Southerly WWTP ArcelorMittal 001 ArcelorMittal 002	227	annual	SWIMS (901 Southerly), (median, 139 obs, 1 <MDL) 2001-06
	ArcelorMittal 022 ArcelorMittal 024	223	annual	STORET #502140, Cuy R @ W 3rd St (RM 3.26) 1999-2004 (median, 60 obs)
OMZA – FPC [B]	ArcelorMittal 005 ArcelorMittal 014 ArcelorMittal 017	226	annual	STORET #502140, Cuy R @ W 3rd St (RM 3.26) 1999-2004 (mean, 8 obs) [C]
OMZM	Southerly WWTP ArcelorMittal 001 ArcelorMittal 002	227	annual	SWIMS (901 Southerly), (median, 139 obs, 1 <MDL) 2001-06
	ArcelorMittal 005 ArcelorMittal 014 ArcelorMittal 017 ArcelorMittal 022 ArcelorMittal 023 ArcelorMittal 024	223	annual	STORET #502140, Cuy R @ W 3rd St (RM 3.26) 1999-2004 (median, 60 obs)
IMZM	Southerly WWTP	227	annual	Used OMZA/OMZM value.
	ArcelorMittal 001	223	annual	Employed downstream ambient value (OMZA).
	ArcelorMittal 002	412 [D]	annual	ArcelorMittal quarterly monitoring, 2001-06
	ArcelorMittal 005	243	annual	October 1998 PSD (source unknown).
	ArcelorMittal 014	226	annual	October 1998 PSD (source unknown).
	ArcelorMittal 017	202	annual	October 1998 PSD (source unknown).
	ArcelorMittal 022	280	annual	ArcelorMittal quarterly monitoring, 2001-06
	ArcelorMittal 023	223	annual	Employed ambient value (OMZA).
	ArcelorMittal 024	196	annual	October 1998 PSD (source unknown).

[A] All units are mg/L.
[B] FPC = fish passage condition
[C] Restricted to hardness measurements taken during a flow range of 600-800 cfs.
[D] Criteria calculations are applicable only for hardness values up to 400; therefore, a value of 400 was used for these calculations.

Table 31 (continued). Instream conditions and discharger (facility) flow.

Parameter	Units	Period	Value	Source
Background Water Quality				
Cuyahoga River DST Mill Creek				
Aluminum	µg/L	annual	1,220	STORET (#F01A25), 10 values, 1<MDL, 1987/00
Ammonia (summer)	mg/L	annual	0.07	SWIMS (801), 47 values, 0<MDL, 2001-06
Ammonia (winter)	mg/L	annual	0.15	SWIMS (801), 36 values, 0<MDL, 2001-06
Antimony		annual	0	No representative data available.
Arsenic	µg/L	annual	3	STORET (#F01A25), 10 values, 10<MDL, 1996/00
Barium	µg/L	annual	81.4	STORET (#F01A25), 5 values, 0<MDL, 2000
Benzene		annual	0	No representative data available.
Bis (2-ethylhexyl) phthalate		annual	0	No representative data available.
Boron		annual	0	No representative data available.
Cadmium	µg/L	annual	0.1	STORET (#F01A25), 10 values, 8<MDL, 1996/00
Chlorine, total residual	µg/L	annual	0	No representative data available.
Chromium	µg/L	annual	22.5	STORET (#F01A25), 10 values, 9<MDL, 1996/00
Chromium^{6+}	µg/L	annual	0	Ohio EPA (1988)[A], 5, 5<MDL, ≤ 1988
Copper	µg/L	annual	5	STORET (#F01A25), 10 values, 8<MDL, 1996/00
Cyanide, free	µg/L	annual	0	STORET (#F01A25), 11 values, 11<MDL, 1987-91
Fluoride		annual	0	No representative data available.
Iron	µg/L	annual	2,310	STORET (#F01A25), 10 values, 0<MDL, 1987/00
Lead	µg/L	annual	3	STORET (#F01A25), 10 values, 3<MDL, 1996/00
Mercury	µg/L	annual	0	STORET (#F01A25), 10 values, 10<MDL, 1996/00
Molybdenum		annual	0	No representative data available.
Naphthalene		annual	0	No representative data available.
Nickel	µg/L	annual	29	STORET (#F01A25), 5 values, 4<MDL, 2000
Nitrate+Nitrite-N	mg/L	annual	2.65	STORET (#F01A25), 5 values, 0<MDL, 2000
Pentachlorophenol		annual	0	No representative data available.
Selenium	µg/L	annual	0	STORET (#F01A25), 5 values, 5<MDL, 2000
Silver		annual	0	No representative data available.
Strontium	µg/L	annual	227.2	STORET (#F01A25), 5 values, 0<MDL, 2000
Dissolved Solids	mg/L	annual	516.5	STORET (#F01A25), 10 values, 0<MDL, 1996/00
1,2,4-TMB		annual	0	No representative data available.
Tetrachloroethylene		annual	0	No representative data available.
Zinc	µg/L	annual	23.5	STORET (#F01A25), 10 values, 0<MDL, 1996/00

[A] Analysis of Un-impacted Stream Data for the State of Ohio (Paula S. Brown).

Table 31 (continued). Instream conditions and discharger (facility) flow.

Parameter	Units	Period	Value	Source
Background Water Quality (continued)				
Big Creek NR mouth				
Aluminum	µg/L	annual	104	STORET (#502120), 6 values, 0<MDL, 1991
Ammonia (summer)	mg/L	annual	0.23	STORET (#502120), 18 values, 0<MDL, 1990-96
Ammonia (winter)	mg/L	annual	0.49	Estimated from ratios of summer/winter for other stations.
Antimony		annual	0	No representative data available.
Arsenic	µg/L	annual	2	STORET (#502120), 14 values, 7<MDL, 1990-96
Barium	µg/L	annual	31.9	STORET (#502120), 6 values, 0<MDL, 1991
Benzene		annual	0	No representative data available.
Bis (2-ethylhexyl) phthalate		annual	0	No representative data available.
Boron		annual	0	No representative data available.
Cadmium	µg/L	annual	0.1	STORET (#502120), 24 values, 21<MDL, 1990-96
Chlorine, total residual	µg/L	annual	0	No representative data available.
Chromium	µg/L	annual	15	STORET (#502120), 24 values, 23<MDL, 1990-96
Chromium^{6+}	µg/L	annual	0	Ohio EPA (1988)[A], 5, 5<MDL, ≤ 1988
Copper	µg/L	annual	5	STORET (#502120), 24 values, 20<MDL, 1990-96
Cyanide, free	µg/L	annual	0	STORET (#502120), 6 values, 6<MDL, 1990-96
Fluoride		annual	0	No representative data available.
Iron	µg/L	annual	294	STORET (#502120), 7 values, 0<MDL, 1990-96
Lead	µg/L	annual	2.9	STORET (#502120), 24 values, 7<MDL, 1990-96
Mercury	µg/L	annual	0	STORET (#502120), 10 values, 10<MDL, 1990-96
Molybdenum		annual	0	No representative data available.
Naphthalene		annual	0	No representative data available.
Nickel	µg/L	annual	20	STORET (#502120), 19 values, 17<MDL, 1990-96
Nitrate+Nitrite-N	mg/L	annual	0.58	STORET (#502120); NO_2: 0.05 mg/L, 13 values, 0<MDL, 1990-91; NO_3: 0.53 mg/L, 18 values, 1<MDL, 1990-96
Pentachlorophenol		annual	0	No representative data available.
Selenium	µg/L	annual	0	STORET (#502120), 7 values, 7<MDL, 1990-96
Silver		annual	0	No representative data available.
Strontium	µg/L	annual	0	STORET (#502120), 5 values, 0<MDL, 2000
Dissolved Solids	mg/L	annual	602	STORET (#502120), 18 values, 0<MDL, 1990-96
1,2,4-TMB		annual	0	No representative data available.
Tetrachloroethylene		annual	0	No representative data available.
Zinc	µg/L	annual	15	STORET (#502120), 24 values, 5<MDL, 1990-96

[A] *Analysis of Un-impacted Stream Data for the State of Ohio* (Paula S. Brown).

Table 31 (continued). Instream conditions and discharger (facility) flow.

Parameter	Units	Period	Value	Source
Background Water Quality (continued)				
Morgana Run NR mouth				
Aluminum	µg/L	annual	1,113	STORET (#F01W44), 6 values, 0<MDL, 1991
Ammonia (summer)	mg/L	annual	2.83	STORET (#F01W44), 30 values, 0<MDL, 1990-96
Ammonia (winter)	mg/L	annual	3.51	STORET (#F01W44), 33 values, 0<MDL, 1990-96
Antimony		annual	19.9	STORET (#F01W44), 6 values, 4<MDL, 1991
Arsenic	µg/L	annual	4	STORET (#F01W44), 22 values, 0<MDL, 1990-96
Barium	µg/L	annual	54.6	STORET (#F01W44), 6 values, 0<MDL, 1991
Benzene		annual	0	No representative data available.
Bis (2-ethylhexyl) phthalate		annual	0	No representative data available.
Boron		annual	0	No representative data available.
Cadmium	µg/L	annual	0.6	STORET (#F01W44), 35 values, 9<MDL, 1990-96
Chlorine, total residual	µg/L	annual	0	No representative data available.
Chromium	µg/L	annual	15	STORET (#F01W44), 35 values, 20<MDL, 1990-96
Chromium^{6+}	µg/L	annual	0	Ohio EPA (1988)[A], 5, 5<MDL, ≤ 1988
Copper	µg/L	annual	5.5	STORET (#F01W44), 35 values, 20<MDL, 1990-96
Cyanide, free	µg/L	annual	0.326	STORET (#F01W44), 17 values, 1<MDL, 1990-91
Fluoride		annual	0	No representative data available.
Iron	µg/L	annual	1160	STORET (#F01W44), 13 values, 0<MDL, 1990-96
Lead	µg/L	annual	7	STORET (#F01W44), 35 values, 4<MDL, 1990-96
Mercury	µg/L	annual	0	STORET (#F01W44), 11 values, 11<MDL, 1991-96
Molybdenum		annual	0	No representative data available.
Naphthalene		annual	0	No representative data available.
Nickel	µg/L	annual	20	STORET (#F01W44), 31 values, 23<MDL, 1991-96
Nitrate+Nitrite-N	mg/L	annual	4.34	STORET (#F01W44); NO_2: 0.14 mg/L, 28 values, 0<MDL, 1990-91; NO_3: 4.20 mg/L, 32 values, 0<MDL, 1990-96
Pentachlorophenol		annual	0	No representative data available.
Selenium	µg/L	annual	36.5	STORET (#F01W44), 6 values, 2<MDL, 1991
Silver		annual	0	No representative data available.
Strontium	µg/L	annual	0	No representative data available.
Dissolved Solids	mg/L	annual	776	STORET (#F01W44), 31 values, 0<MDL, 1990-96
1,2,4-TMB		annual	0	No representative data available.
Tetrachloroethylene		annual	0	No representative data available.
Zinc	µg/L	annual	40.7	STORET (#F01W44), 35 values, 0<MDL, 1990-96

[A] *Analysis of Un-impacted Stream Data for the State of Ohio* (Paula S. Brown).

Table 32. Summary of effluent limits to maintain applicable water quality criteria.

Parameter [D]	Units	Average				Maximum Aquatic Life	Inside Mixing Zone Maximum
		Human Health	Wildlife	Agriculture	Aquatic Life		
Outfall 001 (RM 6.82)							
Ammonia (summer)	mg/L	--	--	--	1.5	13	--
Ammonia (winter)	mg/L	--	--	--	7.3	16	--
Barium	µg/L	5,190,000 [A]	--	--	4,000	4,000	4,000
Benzene	µg/L	705,600 [A]	--	--	274,700 [A]	1,467,000 [A]	1,400
Boron	µg/L	6,490,000 [A]	--	--	17,000	17,000	17,000
Fluoride	µg/L	--	--	64,900	--	--	--
Iron	µg/L	--	--	298,500	--	--	--
Zinc, TR	µg/L	46,620 [A]	--	67,400 [A]	510	510	510
Outfall 002 (RM 6.68)							
1,2,4-Trimethylbenzene	µg/L	4,442 [A]	--	--	588 [A]	6,669 [A]	280
Ammonia (summer)	mg/L	--	--	--	1.668	14.87	--
Ammonia (winter)	mg/L	--	--	--	8.281	18.03	--
Antimony	µg/L	40,290 [A]	--	--	7,447 [A]	42,870 [A]	1,800
Barium	µg/L	5,190,000 [A]	--	--	4,532 [A]	59,060 [A]	4,000
Boron	µg/L	6,490,000 [A]	--	--	23,570 [A]	226,600 [A]	17,000
Dissolved Solids	mg/L	--	--	--	1,889	--	--
Fluoride	µg/L	--	--	64,900	--	--	--
Lead, TR [B]	µg/L	--	--	378	96 [C]	1,661 [C]	12,000 [C]
Naphthalene [B]	µg/L	61,980 [A]	--	--	823 [A]	8,098 [A]	340
Tetrachloroethylene [B]	µg/L	92,297 [A]	--	--	2,077 [A]	20,480 [A]	850
Zinc, TR	µg/L	46,620 [A]	--	67,400 [A]	383	303	830

[A] Allocation must not exceed that for Inside Mixing Zone Maximum.
[B] Parameter does not require a WLA based on reasonable potential, but an allocation is needed because it is an effluent guideline parameter.
[C] WLA based on applicable dissolved metal translator.
[D] TR=total recoverable

Table 32 (continued). Summary of effluent limits to maintain applicable water quality criteria.

Parameter [D]	Units	Average: Human Health	Average: Wildlife	Average: Agriculture	Average: Aquatic Life	Maximum Aquatic Life	Inside Mixing Zone Maximum
Outfall 005 (RM 5.39)							
Aluminum	µg/L	27,300	--	--	--	--	--
Ammonia (summer) [B]	mg/L	--	--	--	--	21.18	--
Ammonia (winter) [B]	mg/L	--	--	--	--	17.86	--
Ammonia (FPC)	mg/L	--	--	--	18.07 [F]	--	--
Barium	µg/L	--	--	--	617 [F]	--[G]	4,000
Bis (2-ethylhexyl) phthalate	µg/L	--[G]	--	--	68 [F]	--[G]	2,100
Boron	µg/L	--	--	--	3,559 [F]	--[G]	17,000
Chlorine, total residual	µg/L	--	--	--	28 [F]	24	38
Copper, TR	µg/L	86,410 [A]	--	$4.261 \cdot 10^{10}$ [A]	53 [C,F]	54 [C]	84 [C]
Cyanide, free	mg/L	68.11 [A]	--	--	0.020 [F]	0.029	0.044
Dissolved Solids	mg/L	--	--	--	2,961 [F]	--	--
Lead, TR [B]	µg/L	--	--	$6.904 \cdot 10^{10}$ [A]	975 [C,F]	12,440 [C]	6,340 [C]
Zinc, TR	µg/L	46,240 [A]	--	$4.228 \cdot 10^{10}$ [A]	618 [A,C,F]	310 [C]	550 [C]
Outfall 014 (RM 4.81)							
Ammonia (summer) [B]	mg/L	--	--	--	--	19.72	--
Ammonia (winter) [B]	mg/L	--	--	--	--	17.11	--
Ammonia (FPC)	mg/L	--	--	--	17.1 [F]	--	--
Chlorine, total residual	µg/L	--	--	--	26 [F]	24	38
Copper, TR	µg/L	83,200 [A]	--	$3.773 \cdot 10^{10}$ [A]	49 [C,F]	51 [C]	79 [C]
Dissolved Solids	mg/L	--	--	--	2,781 [F]	--	--
Zinc, TR	µg/L	44,630 [A]	--	$3.763 \cdot 10^{10}$ [A]	574 [A,C,F]	301 [C]	510 [C]
Outfall 017 (RM 4.7)							
Aluminum	µg/L	188,100	--	--	--	--	--
Antimony	µg/L	--	--	--	1,800 [F]	--[G]	1,800
Barium	µg/L	$1.82 \cdot 10^{7}$ [A]	--	--	4,000 [F]	4,000	4,000
Boron	µg/L	--	--	--	17,000 [F]	--[G]	17,000
Chlorine, total residual	µg/L	--	--	--	38 [F]	38	38
Dissolved Solids	mg/L	--	--	--	2,649 [F]	--	--
Lead, TR [B]	µg/L	--	--	5,010	5,010 [C,F]	5,010 [C]	5,010 [C]
Molybdenum	µg/L	1,421,000 [A]	--	--	370,000 [F]	370,000	370,000
Zinc, TR	µg/L	43,470 [A]	--	$3.429 \cdot 10^{10}$ [A]	470 [C,F]	470 [C]	470 [C]

[A] Allocation must not exceed that for Inside Mixing Zone Maximum.
[B] Parameter does not require a WLA based on reasonable potential, but an allocation is needed because it is an effluent guideline parameter.
[C] WLA based on applicable dissolved metal translator.
[D] TR=total recoverable
[F] WLA for Aquatic Life Average only applies to Fish Passage Conditions (Q = 703 cfs and Feb-May period).
[G] Because a WLA was only required under Fish Passage Conditions and not triggered otherwise, no allocation for any other use designation was warranted.

Table 32 (continued). Summary of effluent limits to maintain applicable water quality criteria.

Parameter [D]	Units	Average				Maximum Aquatic Life	Inside Mixing Zone Maximum
		Human Health	Wildlife	Agriculture	Aquatic Life		
Outfall 022 (RM 5.9)							
Barium	µg/L	5,091,000 [A]	--	--	4,419 [A]	57,830 [A]	4,000
Boron	µg/L	6,365,000 [A]	--	--	22,980 [A]	25,260 [A]	17,000
Copper, TR	µg/L	86,700 [A]	--	3,688 [A]	201 [A]	54	96
Cyanide, free	mg/L	68.37 [A]	--	--	0.020	0.029	0.044
Dissolved Solids	mg/L	--	--	--	1,578	--	--
Fluoride	µg/L	--	--	63,650	--	--	--
Iron	µg/L	--	--	292,700	--	--	--
Selenium, TR	µg/L	23,060	--	372	19	--	--
Zinc, TR	µg/L	46,390 [A]	--	66,560 [A]	1,538 [A]	311	620
Outfall 023 (Burke Br; RM 5.39)							
Ammonia (summer)	mg/L	--	--	--	--	13	--
Ammonia (winter)	mg/L	--	--	--	--	12	--
Copper, TR	µg/L	64,000 [A]	--	500 [A]	--	78 [C]	78 [C]
Fluoride	µg/L	--	--	2,000	--	--	--
Zinc, TR	µg/L	35,000 [A]	--	25,000 [A]	--	510 [C]	510 [C]
Outfall 024 (RM 5.65)							
Aluminum [B]	µg/L	27,590	--	--	--	--	--
Iron [B]	µg/L	--	--	292,700	--	--	--
Nitrate+Nitrite-N [B]	mg/L	--	--	73,180	--	--	--
Zinc, TR	µg/L	46,390 [A]	--	66,560 [A]	460 [C]	460 [C]	460 [C]

[A] Allocation must not exceed that for Inside Mixing Zone Maximum.
[B] Parameter does not require a WLA based on reasonable potential, but an allocation is needed because it is an effluent guideline parameter.
[C] WLA based on applicable dissolved metal translator.
[D] TR=total recoverable

Table 33. Parameter assessment for **Outfall 001**.

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Sulfate

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Ammonia (winter)	Manganese	Molybdenum

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

Ammonia (summer)	Barium	Benzene
Boron	Fluoride	Iron

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

No parameters fit the criteria of this group.

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
Zinc	µg/L	annual	--	510

Table 34. Parameter assessment for **Outfall 002.**

Group 1 — Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Chloride	Magnesium	Phosphorus, total
Potassium	Sulfate	

Group 2 — Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Aluminum	Ammonia (winter)	Chloroform
Chloromethane	Cyanide, *total*	Iron
Lead	Manganese	Molybdenum
Naphthalene	Nitrate+Nitrite-N	Strontium
Tetrachloroethylene [A]		

Group 3 — PEQ_{max} <50% of maximum PEL and PEQ_{avg} <50% of average PEL. No limit is recommended and monitoring is optional.

1,2,4-Trimethylbenzene	Ammonia (summer)	Antimony
Barium	Boron	Fluoride

Group 4 — PEQ_{max} >50% but <100% of the maximum PEL or PEQ_{avg} >50% but <100% of the average PEL. Monitoring is appropriate.

Dissolved Solids

Group 5 — PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
Zinc	µg/L	annual	--	303

[A] Effluent data for tetrachloroethylene not available but a WLA was requested by Permits Section.

Table 35. Parameter assessment for **Outfall 005.**

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Fluoride	Iron	Magnesium
Nitrate+Nitrite-N	Phenolics, total	Sulfate
Titanium		

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Ammonia (summer)	Ammonia (winter)	Lead
Manganese	Molybdenum	

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

Ammonia (FPC: Feb-May)	Barium (FPC: Feb-May)	Bis (2-ethylhexyl) phthalate
Boron	Dissolved Solids (FPC: Feb-May)	
Zinc		

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

Aluminum

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
Chlorine, total residual	µg/L	annual	--	24
Copper	µg/L	annual	--	54
Copper	µg/L	Feb-May	53	--
Cyanide, free	mg/L	annual	0.019	0.029

Table 36. Parameter assessment for **Outfall 014**.

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Suspended Solids

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Ammonia (summer) Ammonia (winter)

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

Ammonia (FPC: Feb-May) Dissolved Solids (FPC: Feb-May) Zinc (FPC: Feb-May)

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

Copper (FPC: Feb-May)

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
Chlorine, total residual	µg/L	annual	--	24
Copper	µg/L	annual	--	51
Copper	µg/L	Feb-May	49	
Zinc	µg/L	annual	--	301

Table 37. Parameter assessment for **Outfall 017**.

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Fluoride	Iron	Magnesium
Phosphorus, total	Sulfate	Suspended Solids

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Lead	Manganese

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

Aluminum	Antimony	Barium
Boron	Chlorine, total residual	Molybdenum

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

Dissolved Solids (FPC: Feb-May) Zinc

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
No parameters fit the criteria of this group.				

Table 38. Parameter assessment for **Outfall 022.**

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Magnesium	Sulfate

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Aluminum	Chlorine, total residual	Lead
Manganese	Molybdenum	Nitrate-Nitrite-N

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

Barium	Boron	Fluoride
Iron	Zinc	Dissolved Solids

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

No parameters fit the criteria of this group.

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
Copper	µg/L	annual	--	54
Cyanide, free	mg/L	annual	0.020	0.029
Selenium	µg/L	annual	19	--

Table 39. Parameter assessment for **Outfall 023.**

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

Magnesium	Phosphorus, total	Sulfate
Suspended Solids		

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Aluminum	Barium	Boron
Iron	Manganese	Molybdenum
Nitrate-Nitrite-N		

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

No parameters fit the criteria of this group.

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

Zinc

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
Ammonia	mg/L	winter	--[B]	12
Ammonia [A]	mg/L	summer	--[B]	13
Copper	µg/L	annual	--[B]	78
Fluoride	µg/L	annual	2,000	--

[A] No effluent data available for summer ammonia; hence, winter effluent data used to determine reasonable potential for summer season.
[B] Outfall 023 discharges to Limited Resource Water segment (Burke Br) so Aquatic Life average criteria do not apply.

Table 40. Parameter assessment for **Outfall 024**.

Group 1 Due to a lack of criteria, the following parameter(s) could not be evaluated at this time. The facility may be required to generate toxicity data so that the parameter(s) can be reevaluated.

No parameters fit the criteria of this group.

Group 2 Either the PEQ <25% of WQS or all data below minimum detection limit; a WLA is not required. No limit is recommended and monitoring is optional.

Aluminum Iron Nitrate+Nitrite-N

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

Zinc

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

No parameters fit the criteria of this group.

Group 5 PEQ_{max} >100% of the maximum PEL or PEQ_{avg} >100% of the average PEL, or either PEQ_{avg} or PEQ_{max} is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. A limit is recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits	
			Average	Maximum
No parameters fit the criteria of this group.				

Table 41. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003001 and 3ID00003004 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfall 001						
Flow	MGD	----------	Monitor	----------		M[c]
pH	S.U.	----------	6.5 to 9.0	----------		WQS
Zinc, T. R.	µg/l	----------	Monitor	----------		M/RP[c]
Outfall 004						
Flow	MGD	----------	Monitor	----------		M[c]
pH	S.U.	----------	6.5 to 9.0	----------		WQS

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: M = Monitoring; 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.

Table 42. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003002 and the basis for their recommendation.

		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[c]
Dissolved Solids	mg/l	----------	Monitor	----------		M/RP[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Oil and Grease	mg/l	15	20	--	--	ABS/BPJ/EP
pH	S.U.	----------	6.5 to 9.0	----------		WQS
Zinc, T. R.	µg/l	----------	Monitor	----------		M/RP[c]
Whole Effluent Toxicity						
Acute	TUa	--	1.0	--	--	WET

[a] Effluent loadings based on average design discharge flow of 5.17 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; M = Monitoring; 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); 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.

Table 43. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003005 and the basis for their recommendation.

		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[c]
Temperature	°F	----------	Monitor	----------		M[c]
Dissolved Solids	mg/l	----------	Monitor	----------		M[c]
Ammonia-N	mg/l	----------	Monitor	----------		M[c]
pH	S.U.	----------	6.5 to 9.0	----------		WQS
Chlorine Residual	mg/l	--	0.024	--	--	WLA
Cyanide, Free	mg/l	----------	Monitor	----------		M/RP[c]
Aluminum, T. R.	µg/l	----------	Monitor	----------		M/RP[c]
Copper, T. R.	µg/l	----------	Monitor	----------		M/RP[c]
Lead, T. R.	µg/l	----------	Monitor	----------		M[c]
Mercury, T.	ng/l	----------	Monitor	----------		M[c]
Zinc, T. R.	µg/l	----------	Monitor	----------		M[c]
Whole Effluent Toxicity						
Acute	TUa	--------	Monitor (w/o trigger)	----------		M[c]

[a] Effluent loadings based on average design discharge flow of N/A 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; M = Monitoring; 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); 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.

Table 44. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfalls 3ID00003008 and 3ID00003014 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfall 008						
Flow	MGD	----------	Monitor	----------		M[c]
$CBOD_5$	mg/l	----------	Monitor	----------		M[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Oil and Grease	mg/l	15	20	--	--	BPJ/ABS/EP
pH	S.U.	----------	6.5 to 9.0	----------		WQS
Outfall 014						
Flow	MGD	----------	Monitor	----------		M[c]
Temperature	°F	----------	Monitor	----------		M[c]
Dissolved Solids	mg/l	----------	Monitor	----------		M[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Ammonia-N	mg/l	----------	Monitor	----------		M[c]
Oil and Grease	mg/l	----------	Monitor	----------		M[c]
pH	S.U.	----------	6.5 to 9.0	----------		WQS
Chlorine Residual	mg/l	--	0.024	--	--	WLA
Copper, T. R.	µg/l	----------	Monitor	----------		M/RP[c]
Zinc, T. R.	µg/l	----------	Monitor	----------		M/RP[c]

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); AD = Antidegradation (OAC 3745-1-05); BPJ = Best Professional Judgment; EP = Existing Permit; M = Monitoring; RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A)); 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).

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

Table 45. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfalls 3ID00003010 and 3ID00003011 and the basis for their recommendation.

		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[c]
Oil and Grease	mg/l	---------- Monitor ----------				M[c]
Lead, T. R.	µg/l	---------- Monitor ----------				M[c]
Zinc, T. R.	µg/l	---------- Monitor ----------				M[c]

[a] Effluent loadings based on average design discharge flow of N/A 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; M = Monitoring.

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

Table 46. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003017 and the basis for their recommendation.

		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[c]
Temperature	°F	---------- Monitor ----------				M/RP[c]
Dissolved Solids	mg/l	---------- Monitor ----------				M[c]
Suspended Solids	mg/l	--	--	132	390	BCT/NSPS
Oil and Grease	mg/l	15	20	18.1	30.4	BPJ/ABS/EP; BCT/NSPS/BPJ
pH	S.U.	---------- 6.5 to 9.0 ----------				WQS
Chlorine Residual	mg/l	--	0.038	--	--	EP/WLA/IMZM
Lead, T. R.	µg/l	--	5010	0.98	2.94	WLA/IMZM: BAT/NSPS
Mercury, T.	ng/l	---------- Monitor ----------				M[c]
Zinc, T. R.	µg/l	--	470	1.47	4.41	WLA/IMZM; BAT/NSPS

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); AD = Antidegradation (OAC 3745-1-05); BAT = Best Available Control Technology Currently Available, 40 CFR Part 420, Iron and Steel Manufacturing; BCT = Best Conventional Pollutant Treatment Technology, 40 CFR Part 420, Iron and Steel Manufacturing; BPJ = Best Professional Judgment; EP = Existing Permit M = Monitoring; NSPS = New Source Performance Standards, 40 CFR Part 420, Iron and Steel Manufacturing; RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A 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).

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

Table 47. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003022 and the basis for their recommendation.

		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[c]
Temperature	°F	---------- Monitor ----------				M[c]
Dissolved Solids	mg/l	---------- Monitor ----------				M/RP[c]
Oil and Grease	mg/l	15	20	--	--	BPJ/ABS/EP
pH	S.U.	---------- 6.5 to 9.0 ----------				WQS
Chlorine Residual	mg/l	--	0.024	--	--	EP/WLA
Cyanide, Free	mg/l	---------- Monitor ----------				M/RP[c]
Copper, T. R.	µg/l	---------- Monitor ----------				M/RP[c]
Lead, T. R.	µg/l	---------- Monitor ----------				M[c]
Mercury, T.	ng/l	---------- Monitor ----------				M[c]
Selenium, T. R.	µg/l	19	--	0.22	--	WLA
Zinc, T. R.	µg/l	---------- Monitor ----------				M[c]
Whole Effluent Toxicity Acute	TUa	-------- Monitor (w/o trigger) ----------				M[c]

[a] Effluent loadings based on average design discharge flow of 3.0 MGD.

[b] Definitions: BPJ = Best Professional Judgment; EP = Existing Permit; M = Monitoring; 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).

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

Table 48. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfalls 3ID00003023 and 3ID00023024 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfall 023						
Flow	MGD	----------	Monitor	----------		M[c]
$CBOD_5$	mg/l	----------	Monitor	----------		M[c]
COD	mg/l	----------	Monitor	----------		M[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Ammonia-N	mg/l	----------	Monitor	----------		M/RP[c]
Fluoride	mg/l	----------	Monitor	----------		M/RP[c]
Sulfate	mg/	l----------	Monitor	----------		M[c]
Oil and Grease	mg/l	l----------	Monitor	----------		M[c]
pH	S.U.	l----------	Monitor	----------		M[c]
Copper, T. R.	µg/l	l----------	Monitor	----------		M/RP[c]
Zinc, T. R.	µg/l	l----------	Monitor	----------		M/RP[c]
Outfall 024						
Flow	MGD	----------	Monitor	----------		M[c]
pH	S.U.	----------	6.5 to 9.0	----------		WQS
Zinc, T. R.	µg/l	l----------	Monitor	----------		M[c]

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); AD = Antidegradation (OAC 3745-1-05); BPJ = Best Professional Judgment; EP = Existing Permit; RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A)); 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.

Table 49. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003601 and 3ID00003602 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfall 601						
Flow	MGD	----------	Monitor	----------		M[c]
Dissolved Solids	mg/l	----------	Monitor	----------		M[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Oil and Grease	mg/l	----------	Monitor	----------		M[c]
pH	S.U.	----------	Monitor	----------		M[c]
Cyanide, Free	mg/l	----------	Monitor	----------		M[c]
Lead, T. R.	µg/l	----------	Monitor	----------		M[c]
Zinc, T. R.	µg/l	----------	Monitor	----------		M[c]
Total Toxic Organics	µg/l	--	710	--	--	BAT/BPJ*
Outfall 602						
Flow	MGD	----------	Monitor	----------		M[c]
Dissolved Solids	mg/l	----------	Monitor	----------		M[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Oil and Grease	mg/l	----------	Monitor	----------		M[c]
pH	S.U.	----------	Monitor	----------		M[c]
Cyanide, Free	mg/l	----------	Monitor	----------		M[c]
Lead, T. R.	µg/l	----------	Monitor	----------		M[c]
Zinc, T. R.	µg/l	----------	Monitor	----------		M[c]
Naphthalene*	µg/l	--	--	--	0.223	BAT**
Tetrachloro-Ethylene*	µg/l	--	--	--	0.335	BAT**

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: BAT = Best Available Control Technology Currently Available, 40 CFR Part 420, Iron and Steel Category, and 40 CFR Part 433, Metal Finishing Category; BPJ = Best Professional Judgment; M = Monitoring.

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

* Compliance with this BAT parameter may be shown by a toxic organic management plan and certifications, rather than by monitoring.

** Compliance monitoring for these parameters is not being required. A monitoring waiver for these pollutants is being granted under 40 CFR 122.44(a)(2).

Table 50. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfalls 3ID00003603 and 3ID00003693 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfall 603						
Flow	MGD	---------- Calculated ----------				M[c]
Dissolved Solids	mg/l	---------- Calculated ----------				M[c]
Suspended Solids	mg/l	--	--	632	1284	ABS/AD/EP
Oil and Grease	mg/l	--	--	520	672	BCT, ABS/AD/EP
Cyanide, Free	mg/l	---------- Calculated ----------				M[c]
Lead, T. R.	µg/l	--	--	3.40	9.01	ABS/AD/EP
Zinc, T. R.	µg/l	--	--	6.56	16.2	BAT
Outfall 693						
Flow	MGD	---------- Calculated ----------				M[c]
Dissolved Solids	mg/l	---------- Calculated ----------				M[c]
Suspended Solids	mg/l	--	--	632	1284	ABS/AD/EP
Oil and Grease	mg/l	--	--	485	672	BCT, ABS/AD/EP
Cyanide, Free	mg/l	---------- Calculated ----------				M[c]
Lead, T. R.	µg/l	--	--	3.12	8.24	BAT
Zinc, T. R.	µg/l	--	--	6.09	14.7	BAT

[a] Effluent loadings for outfall 603 apply when the electrogalvanizing process is operating; outfall 693 limits apply when the electrogalvanizing process is not operating.

[b] Definitions: ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); AD = Antidegradation (OAC 3745-1-05); BAT = Best Available Control Technology Currently Available, 40 CFR Part 420, Iron and Steel Category and 40 CFR 433, Metal Finishing Category; BCT = Best Conventional Pollutant Control Technology, 40 CFR Part 420, Iron and Steel Category and 40 CFR 433, Metal Finishing Category; BPJ = Best Professional Judgment; EP = Existing Permit; M = Monitoring.

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

Table 51. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfall 3ID00003604 and the basis for their recommendation.

		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[c]
Suspended Solids	mg/l	--	--	218	657	BPT
Ammonia-N	mg/l					
Summer		--	--	62.4	85.6	301(g) variance
Winter		--	--	81.6	211	301(g) variance
pH	S.U.	---------- Monitor ----------				M[c]
Cyanide, Free	mg/l	--	--	7.36	14.7	BAT
Lead, T. R.	µg/l	--	--	0.74	2.21	BAT
Mercury, T.	ng/l	---------- Monitor ----------				M[c]
Zinc, T. R.	µg/l	--	--	1.00	2.83	EP/BPJ
Phenolics, T.	µg/l	--	--	0.245	0.491	BAT

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: 301(g) variance = Variance from BAT limits provided by Paragraph 301(g) of the Clean Water Act; ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); BAT = Best Available Control Technology Currently Available, 40 CFR Part 420, Iron and Steel Category; BPJ = Best Professional Judgment; BPT = Best Practicable Waste Treatment Technology, 40 CFR Part 420, Iron and Steel Category; EP = Existing Permit; M = Monitoring.

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

Table 52. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfalls 3ID00003622 and 3ID00003632 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfall 622						
Flow	MGD	----------	Monitor	----------		M[c]
Dissolved Solids	mg/l	----------	Monitor	----------		M[c]
Suspended Solids	mg/l	----------	Monitor	----------		M[c]
Oil and Grease	mg/l	----------	Monitor	----------		M[c]
pH	S.U.	----------	Monitor	----------		M[c]
Lead, T. R.	µg/l	----------	Monitor	----------		M[c]
Mercury, T.	µg/l	----------	Monitor	----------		M[c]
Zinc, T. R.	µg/l	----------	Monitor	----------		M[c]
Outfall 632						
Flow	MGD	----------	Calculated	----------		M[c]
Dissolved Solids	mg/l	----------	Calculated	----------		M[c]
Suspended Solids	mg/l	--	--	251	732	NSPS/BPJ
Oil and Grease	mg/l	--	--	75.8	221	NSPS/BPJ
Lead, T. R.	µg/l	--	--	1.46	4.38	NSPS/BPJ
Zinc, T. R.	µg/l	--	--	2.25	6.65	NSPS/BPJ

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: BPJ = Best Professional Judgment; M = Monitoring; NSPS = New Source Performance Standards, 40 CFR Part 420, Iron and Steel Category.

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

Table 53. Final effluent limits and monitoring requirements for ArcelorMittal/Cleveland outfalls 3ID00003613, 3ID00003633, 3ID00003643 and 3ID00003653 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Outfalls 613 and 633						
Flow	MGD	---------- Monitor ----------				M[c]
COD	mg/l	---------- Monitor ----------				M[c]
$CBOD_5$	mg/l	---------- Monitor ----------				M[c]
Suspended Solids	mg/l	30	45	--	--	ABS/EP/BPJ
Oil and Grease	mg/l	---------- Monitor ----------				M[c]
pH	S.U.	---------- Monitor ----------				M[c]
Sulfate	mg/l	---------- Monitor ----------				M[c]
Outfalls 643 and 653						
Flow	MGD	---------- Monitor ----------				M[c]
COD	mg/l	---------- Monitor ----------				M[c]
$CBOD_5$	mg/l	---------- Monitor ----------				M[c]
Suspended Solids	mg/l	---------- Monitor ----------				M[c]
Oil and Grease	mg/l	---------- Monitor ----------				M[c]
pH	S.U.	---------- Monitor ----------				M[c]
Sulfate	mg/l	---------- Monitor ----------				M[c]

[a] Effluent loadings based on average design discharge flow of N/A MGD.

[b] Definitions: ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l)); BPJ = Best Professional Judgment; EP = Existing Permit; M = Monitoring; PD = Plant Design Criteria.

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

Attachment

Effluent Guideline Calculations and 301(g) Variance Analysis

Effluent Guidelines and Limits - Outfall 601

	84" Hot Strip Mill 420.77c1 - 420.73 kg/kkg		84" Hot Strip Mill Tons/day: 10920	84" Hot Strip Mill Loading*		84" HCl Pickling 420.97b2-420.93b2 kg/kkg		84" HCl Pickling Tons/day: 7656	84" HCl Pickling Loading	
	30-day	Daily		30-day	Daily	30-day	Daily		30-day	Daily
TSS	0.16	0.427		1586.458	4233.859	0.035	0.0819		243.308	569.340
O&G	0	0.107		353.648	1060.944	0.0117	0.035		81.334	243.308
Lead	0.000108	0.000325		1.071	3.222	0.000175	0.000526		1.217	3.657
Zinc	0.000163	0.000488		1.616	4.839	0.000234	0.000701		1.627	4.873

	84" Pickling Fume Scrubber 420.97b4-420.93b4 kg/day		691 Loading	
	30-day	Daily	30-day	Daily
TSS	2.45	5.72	**1832.215**	**4808.919**
O&G	0.819	2.45	**435.801**	**1306.701**
Lead	0.0123	0.0368	**2.300**	**6.916**
Zinc	0.0164	0.0491	**3.259**	**9.761**

* 30-day oil & grease limit is a BPJ based on 30% of max. BCT

* Limits for lead and zinc are based on BAT given in the 1982 USEPA Development Doc. Table X-1

	Electrozinc Flow: (MGD) 0	Electrogalvanize Flow: (MGD) 0.5054	Metal Finishing 433.13-433.14		Metal Finishing Loading		601 Loading	
			30-day	Daily	30-day	Daily	30-day	Daily
TSS			31	60 mg/l	59.301	114.776	**1891.516**	**4923.695**
O&G			26	52 mg/l	49.736	99.473	**485.538**	**1406.174**
Lead			0.43	0.69 mg/l	0.823	1.320	**3.122**	**8.236**
Zinc			1.48	2.61 mg/l	2.831	4.993	**6.090**	**14.754**
Cadmium			0.26	0.69 mg/l	0.497	1.320		
Chromium			1.71	2.77 mg/l	3.271	5.299		
Copper			2.07	3.38 mg/l	3.960	6.466		
Nickel			2.38	3.98 mg/l	4.553	7.613		
Silver			0.24	0.43 mg/l	0.459	0.823		
TTO			0	2.13 mg/l	0.000	4.075		

Effluent Guidelines and Limits - Outfalls 602, 603

	84" Recir. MS 420.107a2-420.103a2		84" Recirc MS Production	84" Recirc MS Loading		84" Direct App. SS 420.107a4-420.103a4		84" Direct App. SS Production	84" Direct App. SS Loading	
	30-day	Daily	tons/day	30-day	Daily	30-day	Daily	tons/day	30-day	Daily
TSS	0.00313	0.00626	6936	19.712	39.425	0.0113	0.0225	4624	47.444	94.468
O&G	0.00104	0.00261		6.550	16.437	0.00376	0.00939		15.787	39.425
Lead	0.0000156	0.0000469		0.098	0.295	0.0000563	0.000169		0.236	0.710
Zinc	0.0000104	0.0000313		0.065	0.197	0.0000376	0.000113		0.158	0.474
Naphthalene	0	0.0000104		0.000	0.065	0	0.0000376		0.000	0.158
Tetrachloroethylene	0	0.0000156		0.000	0.098	0	0.0000563		0.000	0.236

	Hot Dip Galvanizing 420.124a1		Hot Dip Galvanizing Production	Hot Dip Galvanizing Loading		Hot Dip Galvanizing Fume Scrubber Loading	
	30-day	Daily		30-day	Daily	30-day	Daily
TSS	0.0188	0.0438	2045	34.871	81.241	2.45	5.72
O&G	0.00626	0.0188		11.611	34.871	0.819	2.45
Lead	0.0000939	0.000282		0.174	0.523	0.0123	0.0368
Zinc	0.000125	0.000376		0.232	0.697	0.0164	0.0491
Naphthalene	0	0		0.000	0.000	0	0
Tetrachloroethylene	0	0		0.000	0.000	0	0

	602 Loading		**603 Loading**		**693 Loading**	
	30-day	**Daily**	**30-day**	**Daily**	**30-day**	**Daily**
TSS	**104.477**	**220.854**	**1995.993**	**5144.549**	**1936.692**	**5029.773**
O&G	**34.767**	**93.183**	**520.304**	**1499.357**	**470.568**	**1399.884**
Lead	**0.521**	**1.565**	**3.643**	**9.801**	**2.821**	**8.481**
Zinc	**0.472**	**1.418**	**6.562**	**16.172**	**3.731**	**11.179**
Naphthalene	**0.000**	**0.223**				
Tetrachloroethylene	**0.000**	**0.335**				

Effluent Guidelines and Limits - Outfalls 017, 622/632

	BOF 420.42b-420.43b 30-day	BOF 420.42b-420.43b Daily	BOF Production	BOF Loading 30-day	BOF Loading Daily	Vac. Degassing 420.54 30-day	Vac. Degassing 420.54 Daily	Vac. Degassing Production	Vac. Degassing Loading 30-day	Vac. Degassing Loading Daily
TSS	0.0104	0.0312	10744	101.458	304.373	0.00261	0.0073	2243	5.316	14.868
O&G	0	0		0.000	0.000	0	0		0.000	0.000
Lead	0.0000626	0.000188		0.611	1.834	0.0000313	0.0000939		0.064	0.191
Zinc	0.0000939	0.000282		0.916	2.751	0.0000469	0.000141		0.096	0.287

	Cont. Casting 420.64 30-day	Cont. Casting 420.64 Daily	Cont. Casting Production	Cont. Casting Loading 30-day	Cont. Casting Loading Daily	**017 Loading 30-day**	**017 Loading Daily**
TSS	0.00261	0.0073	10685	25.322	70.824	**132.096**	**390.065**
O&G	0.00104	0.00313		10.090	30.367	**18.090**	**30.367**
Lead	0.0000313	0.0000939		0.304	0.911	**0.978**	**2.936**
Zinc	0.0000469	0.000141		0.455	1.368	**1.467**	**4.406**

8 kg/day allowance for storm water treated at this outfall

	Cont. Casting 420.64 30-day	Cont. Casting 420.64 Daily	Cont. Casting Production	Cont. Casting Loading 30-day	Cont. Casting Loading Daily	Process Concentrations for BOF, storm/groundwater mg/l 30-day	Process Concentrations for BOF, storm/groundwater mg/l Daily	Flows (gpm) BOF: 600 storm/ground: 250	BOF/storm/groundwater loading kg/day 30-day	BOF/storm/groundwater loading kg/day Daily
TSS	0.00261	0.0073	2335	5.534	15.477	50	150		231.642	694.926
O&G	0.00104	0.00313		2.205	6.636	15	45		69.493	208.478
Lead	0.0000313	0.0000939		0.066	0.199	0.3	0.9		1.390	4.170
Zinc	0.0000469	0.000141		0.099	0.299	0.45	1.35		2.085	6.254

	BPJ Concentrations for cooling tower flows mg/l 30-day	BPJ Concentrations for cooling tower flows mg/l Daily	Flow (gpm) cooling tower: 50	Cooling Tower Loading kg/day 30-day	Cooling Tower Loading kg/day Daily	**Outfall 622/632 Loading 30-day**	**Outfall 622/632 Loading Daily**
TSS	50	80		13.626	21.802	**250.802**	**732.205**
O&G	15	20		4.088	5.450	**75.785**	**220.564**
Lead	0.03	0.04		0.008	0.011	**1.464**	**4.380**
Zinc	0.233	0.342		0.063	0.093	**2.248**	**6.646**

Effluent Guidelines and Limits - Outfall 604

	Blast Furnace 420.32a-420.33a		C5 Furnace Production	C6 Furnace Production	604 Loading	
	30-day	Daily	tons/day:	tons/day:	30-day	Daily
TSS	0.026	0.0782	4755	4497	**218.4212**	**656.9438**
Ammonia	0.00292	0.00876			**24.53038**	**73.59115**
Lead	0.0000876	0.000263			**0.735911**	**2.209415**
Zinc	0.000131	0.000394			**1.100507**	**3.309922**
Cyanide	0.000876	0.00175			**7.359115**	**14.70143**
Phenolics	0.0000292	0.0000584			**0.245304**	**0.490608**

ArcelorMittal 301(g) Variance Review (all values are kg/day)

	BPT	BAT	WLA	Current Limit	PEQ	Draft Limits	Justification
Ammonia (sum)							
30-day	451	24.5	NA	62.4	38.97	46.8	BPJ / 301g
Daily	1353	73.6	3135	85.6	58.97	73.6	BAT
Ammonia (win)							
30-day	451	24.5	NA	81.6	55.2	66.2	BPJ / 301g
Daily	1353	73.6	2472	211	85.3	102.4	BPJ / 301g