National Pollutant Discharge Elimination System
FACT SHEET for
ArcelorMittal Indiana Harbor LLC-Central Wastewater Treatment Plant
Draft: April 2017
Final:

Indiana Department of Environmental Management
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Permittee:	ArcelorMittal Indiana Harbor LLC 3001 Dickey Road East Chicago, Indiana 46312
Existing Permit Information:	Permit Number: IN0063711 Expiration Date: 11/30/2016
Facility Contact:	Wendell Carter (219)391-2834
Facility Location:	ArcelorMittal Indiana Harbor LLC – Central Wastewater Treatment Plant 3001 Dickey Road East Chicago, Indiana Lake County
Receiving Stream:	Indiana Harbor Ship Canal
GLI/Non-GLI:	GLI
Proposed Permit Action:	Renew
Date Application Received:	6/3/16
Source Category	NPDES Major – Industrial
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1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from the permittee on June 3, 2016. The current five year permit was issued with an effective date of December 01, 2011 in accordance with 327 IAC 5-2-6(a). The permit was subsequently modified on November 26, 2014 to resolve a permit appeal. A five year permit is proposed in accordance with 327 IAC 5-2-6(a).

The Federal Water Pollution Control Act of 1972 and subsequent amendments require a NPDES permit for the discharge of wastewater to surface waters. Furthermore, Indiana Code (IC) 13-15-1-2 requires a permit to control or limit the discharge of any contaminants into state waters or into a publicly owned treatment works. This proposed permit action by IDEM complies with both federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.56, as well as Indiana Administrative Code (IAC) 327 Article 5, development of a Fact Sheet is required for NPDES permits. This document fulfills the requirements established in those regulations.

This Fact Sheet was prepared in order to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, and wasteload allocations to meet Indiana Water Quality Standards. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

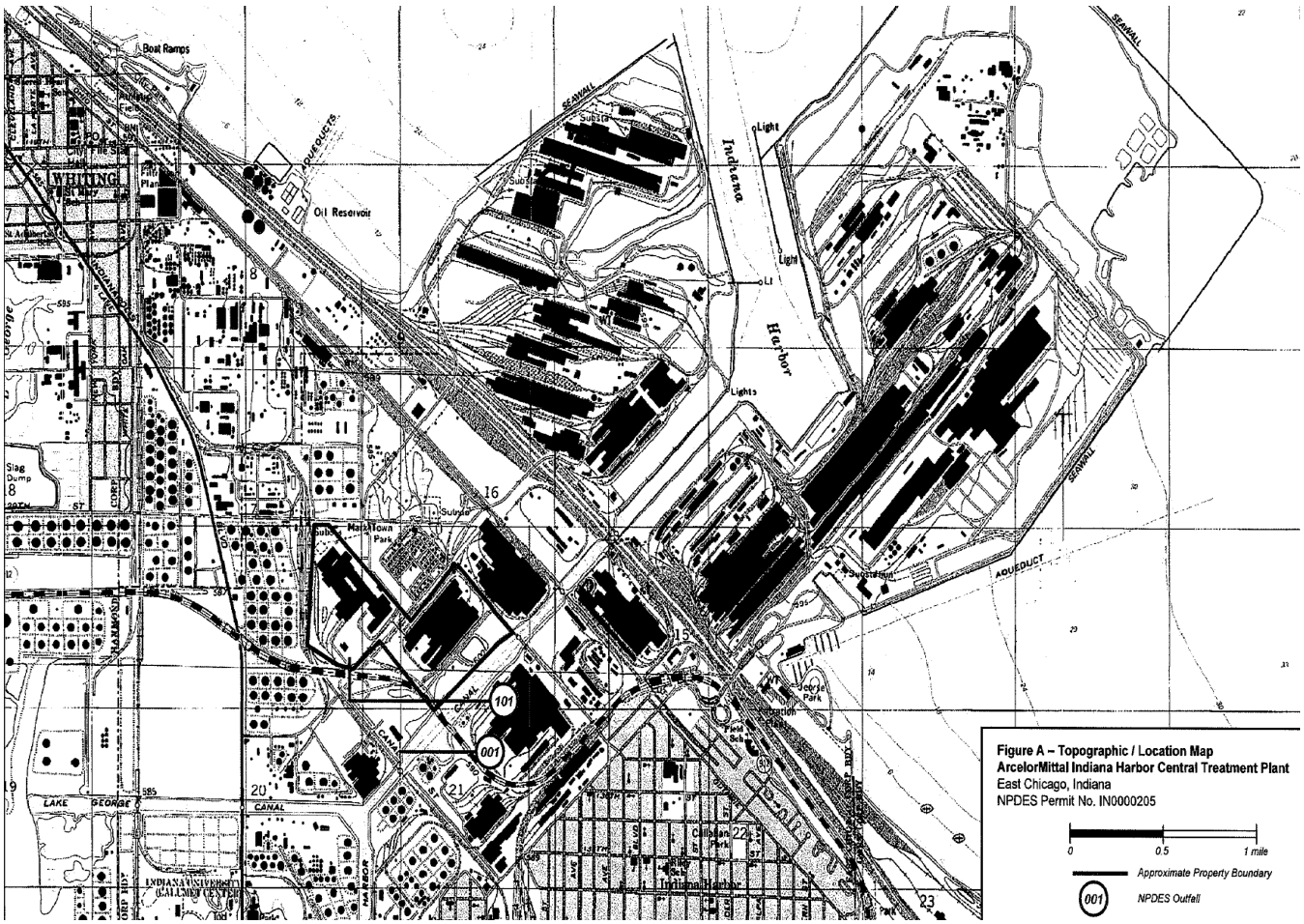
2.0 FACILITY DESCRIPTION

2.1 General

ArcelorMittal Indiana Harbor LLC is classified under Standard Industrial Classification (SIC) Code 3312 – Steel Mill. The permittee is a steel mill that produces molten iron in blast furnaces, crude steel in basic oxygen furnaces, and cast steel slabs. The cast steel slabs are processed into strip steel at other ArcelorMittal steel mills. Those operations are regulated under NPDES Permit No. IN0000205 (Indiana Harbor West). ArcelorMittal Indiana Harbor LLC also produces hot-dipped galvanized steel strip. The galvanizing operations and the adjacent U.S. Steel East Chicago Tin Operations are regulated under this separate NPDES Permit for the ArcelorMittal Central Wastewater Treatment Plant, NPDES Permit No. IN0063711. The U.S. Steel East Chicago Tin Operations contribute more than 95% of the process wastewater flow at the Central Wastewater Treatment Plant.

A map showing the location of the facility has been included as Figure 1.

Figure 1: Facility Location



2.2 Outfall Locations

Outfall 001	Latitude: 41º 38’ 55” Longitude: 87º 23’ 05”
Outfall 101	Latitude: 41º 39’ 16” Longitude: 87º 28’ 20”

2.3 Wastewater Treatment

The current discharge from Outfall 001 consists of wastestreams from Internal Outfall 101, non-contact cooling water, site storm water, and groundwater. The discharge from Outfall 001 has an average discharge of approximately 9.5 MGD.

The discharge from Internal Outfall 101 is from the on-site Central Wastewater Treatment Plant (CWTP) and currently consists of wastewaters from: U.S. Steel (USS) No. 2 Pickler (idle as of January 2015); cold rollers in the USS 6-Stand and 2-Stand Mills and ArcelorMittal No. 2 Galvanizing Temper Mill; USS alkaline cleaning operations; hot-dip galvanizing operations from

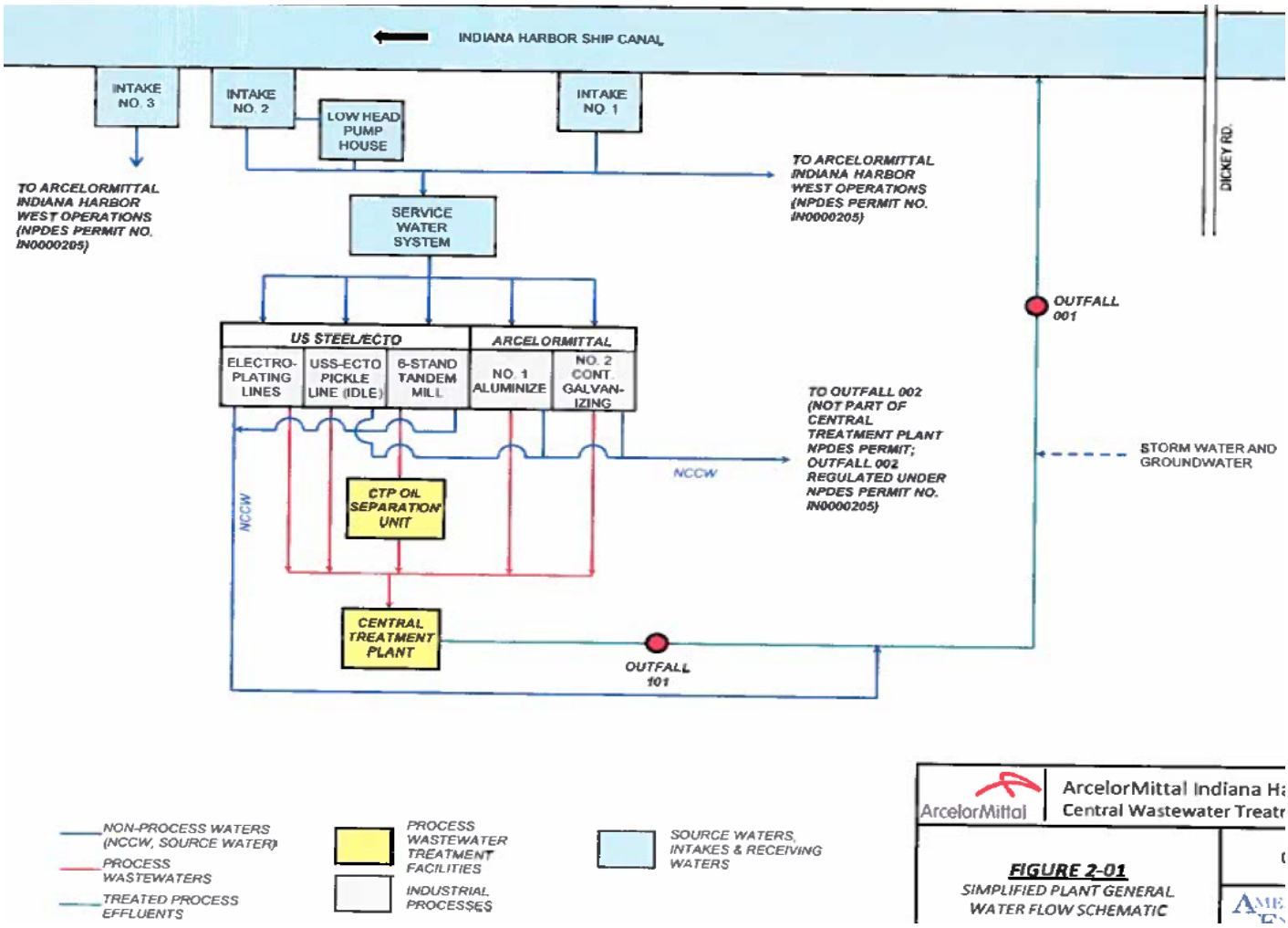
ArcelorMittal No.1 (idle as of 4th quarter 2015) and No. 2 galvanizing lines and; USS tin and chromium line electroplating operations.

Discharges from the U. S. Steel / ECTO No. 2 6-Stand Tandem Cold Rolling Mill are treated in an oil separator unit prior to discharge to the Central Wastewater Treatment Plant. Cold rolling wastewaters are sent through an API separator unit, coagulant mix tank (coagulant and ferric chloride addition), and a dissolved air flotation unit (DAF). Oil removed by the API separator and skimmings and sludge removed by the DAF is re-used on site.

Treated oily wastewaters from the cold rolling mill and wastewaters from other ArcelorMittal and U.S. Steel/ ECTO operations discharge to a wet well and are sent through primary mix tanks, scalping tanks, secondary mix tanks, and the No. 1 and No. 2 clarifiers. Sludge from the clarifiers is thickened and dewatered for off-site disposal.

The discharge from Internal Outfall 101 has an average discharge of approximately 5.1 MGD. A Flow Diagram has been included as Figure 2.

Figure 2: Flow Diagram



Outfall 001: The average daily discharge from Outfall 001 to the Indiana Harbor Ship Canal is 9.5 MGD and based on the most recent 2 years of data. This flow was used in the updated WLA included as an attachment to this Fact Sheet.

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22-5. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7. IDEM has given the permittee a Class D industrial wastewater treatment plant classification.

2.4 Changes in Operation

- The permit renewal application proposes the following: The No.1 Aluminize Line (ArcelorMittal operation) was idled in the 4th quarter of 2015, and is expected to resume operations as market conditions improve. The technology-based effluent limits (TBELs) provided in attachment 2 to the application included mass allowances for the No. 1 aluminize line.
- The No.2 Acid Pickling Line (U.S. Steel/ECTO operation) was idled in January 2015. It is assumed operations would resume as market conditions improve. The TBELs provided in Attachment 2 of the renewal application include mass allowances for the No. 2 Pickle Line.
- Note, IDEM has determined to fulfill this request and maintain the likelihood that these processes will eventually come back on line during this next permit cycle.
- ArcelorMittal requested that the monitoring waivers for total recoverable cadmium, total recoverable lead, total recoverable silver, naphthalene and tetrachloroethylene at Outfall 101 be continued in the renewed NPDES permit.

2.5 Facility Storm Water

Site storm water is discharged via Outfall 001 without treatment. Storm water monitoring requirements can be found in Section 5.7 of this Fact Sheet.

3.0 PERMIT HISTORY

3.1 Compliance history

A review of this facility's discharge monitoring data was conducted for compliance verification and shows one permit limitation violation for whole effluent toxicity test [11/13] at Outfall 001 between October 2013 and October 2016. One limitation violation for oil and grease [12/14] was found at Internal Outfall 101.

There are no pending or current enforcement actions regarding this NPDES permit.

4.0 RECEIVING WATER

The receiving stream for Outfall 001 is the Indiana Harbor Ship Canal. The $Q_{7,10}$ low flow value of the Indiana Harbor Ship Canal is 358 cfs and shall be capable of supporting a well-balanced

warm water aquatic community and full body contact recreation in accordance with 327 IAC 2-1.5-5.

The permittee discharges to a waterbody that has been identified as a water of the state within the Great Lakes system. Therefore, in addition to OSRW antidegradation implementation procedures, it is subject to other NPDES requirements specific to Great Lakes system dischargers under 327 IAC 2-1.5 and 327 IAC 5-2-11.2, and 327 IAC 5-2-11.4-6. These rules address water quality standards applicable to dischargers within the Great Lakes system and reasonable potential to exceed water quality standards procedures.

In accordance with 327 IAC 2-1.3, language in this renewed permit specifically prohibits the permittee from undertaking deliberate actions that would result in new or increased discharges of BCC's or new or increased permit limits for non-BCC's, or from allowing a new or increased discharge of a BCC from an existing or proposed industrial user, without first proving that the new or increased discharge would not result in a significant lowering of water quality, or by submission and approval of an antidegradation demonstration to the IDEM.

4.1 Receiving Stream Water Quality

Section 303(d) of the Clean Water Act requires states to identify waters, through their Section 305(b) water quality assessments, that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of impaired waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. Indiana's 2014 303(d) List of Impaired Waters was developed in accordance with Indiana's Water Quality Assessment and 303(d) Listing Methodology for Waterbody Impairments and Total Maximum Daily Load Development for the 2014 Cycle.

The Indiana Harbor Ship Canal is listed on Indiana's 2014 303(d) List of Impaired Waters for *E. coli*, oil and grease, impaired biotic communities, and PCB's in fish tissue. The Lake Michigan shoreline east and west of the Indiana Harbor Canal is listed for mercury and PCB's in fish tissue. A TMDL report has not been completed for the Indiana Harbor Ship Canal.

5.0 PERMIT LIMITATIONS

Two categories of effluent limitations exist for NPDES permits: Technology-Based Effluent Limits (TBELs) and; Water Quality-Based Effluent Limits (WQBELs).

TBELs are developed by applying the National Effluent Limitation Guidelines (ELGs) established by USEPA for specific industrial categories. TBELs are the primary mechanism of control and enforcement of water pollution under the Clean Water Act (CWA). Technology based treatment requirements under section 301(b) of the CWA represent the minimum level of control/treatment using available technology that must be imposed in a section 402 permit (40 CFR 125.3(a)).

In the absence of ELGs, effluent limits can also be based upon Best Professional Judgment (BPJ). Accordingly, every individual member of a discharge class or category is required to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. This means that TBELs based upon a BPJ determination are applied at end-of-pipe and mixing zones are not allowed (40 CFR 125.3(a)). Similarly, since the statutory deadlines best practicable technology (BPT), best available technology economically achievable (BAT) and best conventional control technology (BCT) have all passed; compliance schedules for these TBELs are also not allowed.

WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The WQBELs for this facility are based on water quality criteria in 327 IAC 2-1.5-8 or under the procedures described in 327 IAC 2-1.5-11 through 327 IAC 2-1.5-16 and implementation procedures in 327 IAC 5. Limitations and/or monitoring are required for parameters identified by applications of the reasonable potential to exceed WQBEL under 327 IAC 5-2-11.5.

According to 40 CFR 122.44 and 327 IAC 5, NPDES permit limits are based on either TBELs, where applicable, BPJ, or WQBELs, whichever is most stringent. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application. In addition, when performing a permit renewal, existing permit limits must be considered. These may be TBELs, WQBELs, or limits based on BPJ. When renewing a permit, the antibacksliding provisions identified in 327 IAC 5-2-10(11) are taken into consideration.

5.1 Existing Permit Limits

Outfall 001

DISCHARGE LIMITATIONS

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-------	-------	-----	Daily	24 Hour Total
O + G	Report	Report	lbs/day	10	15	mg/l	2 X Weekly	2 Grabs/24-Hr.
TSS	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
TRC	0.87	2.1	lbs/day	0.016	0.038	mg/l	5 X Weekly	Grab
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	6 X Yearly	Grab
Final	0.000071	0.00017	lbs/day	1.3	3.2	ng/l	6 X Yearly	Grab
Free Cyanide	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab
Total Cyanide	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Hexavalent Chromium	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab
Temperature								
Intake	-------	--------	------	Report	Report	ºF	2 X Weekly	Grab
Outfall	-------	--------	------	Report	Report	ºF	2 X Weekly	Grab
Whole Effluent Toxicity Tests								

Table 2

Parameter	Quality or Concentration Daily Minimum	Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
pH	6.0	9.0	s.u.	2 X Weekly	Grab

Internal Outfall 101

DISCHARGE LIMITATIONS

Parameter	Quantity or Loading Monthly Average	Daily Maximum	Units	Quality or Concentration Monthly Average	Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Flow	Report	Report	MGD	-------	---------	------	----------	24 Hour Total
O + G	542	813	lbs/day	Report	Report	mg/l	2 X Weekly	2 Grabs/24-Hr.
TSS	1,198	2,604	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Cadmium	3.8	10	lbs/day	Report	Report	mg/l	[&]	
Zinc	8.8	17	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
T. Chromium	24.7	40.0	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Hex. Chromium	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab
Lead	3.8	7.5	lbs/day	Report	Report	ug/l	[&]	
Nickel	34.3	57.4	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Copper	1.3	2.2	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Silver	0.018	0.03	lbs/day	Report	Report	mg/l	[&]	
T. Cyanide	9.4	17.3	lbs/day	Report	Report	mg/l	2 X Weekly	Grab
Naphthalene	Report	0.158	lbs/day	Report	Report	mg/l	[&]	
TCE	Report	0.236	lbs/day	Report	Report	mg/l	[&]	
TTO	-------	30.7	lbs/day	------	Report	mg/l	1 X Quarterly	

[&] Monitoring waiver granted

5.2 Technology-Based Effluent Limits (TBEL)

The applicable technology based standards for the wastestreams contributing to the discharge from Outfall 001 and Internal Outfall 101 are contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. In addition, technology based standards contained in 40 CFR 433 – Metal Finishing Point Source Category are applicable to the discharge associated with the electroplating lines. The following table identifies the applicable standards and production values submitted in the facility's NPDES application.

This permit covers production related discharges from both ArcelorMittal and the U.S. Steel facilities. For Arcelor Mittal the following guideline production based requirements apply:

Applicable ELGs and Production Values

Subpart	Description	Average Daily Production
40 CFR 420.90 Subpart I – Acid Pickling Subcategory	Discharges from sulfuric acid, hydrochloric acid, or combination acid pickling operations	1,712 tons/day
40 CFR 420.100 Subpart J – Cold Forming Subcategory	Discharges from cold rolling in which unheated steel is passed through rolls or otherwise processed	1,712 tons/day
40 CFR 420.110	Discharges in which steel products are	770 tons/day

Subpart K – Alkaline Cleaning Subcategory	immersed in alkaline cleaning baths to remove mineral and animal fats or oils	
40 CFR 420.120 Subpart L – Hot Coating Subcategory	Discharges from operations in which steel is coated by the hot dip process	2,641 tons/day
40 CFR 433.10 Metal Finishing Point Source Category	Discharges from any of the following six metal finishing operations on any basis material: Electroplating, Electroless Plating, Anodizing, Coating, Chemical Etching and Milling, and Printed Circuit Board Manufacture	1.73 MGD

The following tables contain the applicable ELGs, by parameter, from the federal regulations identified above and the calculated technology-based limits (TBELs). Typically, TBELs are established for the discharge from each individual wastestream. However, many steel mills have centralized wastewater treatment facilities designed to treat any combination of wastewaters. 40 CFR 420.01(b)(1) identifies specific steel mills and their associated centralized treatment facilities where alternative effluent limitations may be established. ArcelorMittal West (formerly J&L Steel, East Chicago), NPDES Permit No. IN0000205, is identified in 40 CFR 420.01(b)(1) and the alternative effluent limitations from the central treatment facility are applicable. The technology based effluent limitations for Internal Outfall 101 are established by adding all applicable pollutant loads for each wastestream, by parameter, contained in 40 CFR Part 420 and 40 CFR 433.

Total Suspended Solids					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT)	1,712 Tons/Day	0.0350 lbs/1000lbs	120[1]	0.0818 lbs/1000lbs	280
420.93(b)(2) (BAT)		-------	---------	--------	--------
420.92(b)(4) (BPT)	1 Scrubber	2.45 kg/day	5.40[2]	5.72 kg/day	12.6
420.93(b)(4) (BAT)		-------	---------	--------	--------
420.102(a)(2) (BPT)	1,712 Tons/Day	0.00313 lbs/1000lbs	10.7	0.00626 lbs/1000lbs	21.4
420.103(a)(2) (BAT)		-------	---------	--------	--------
420.112(b) (BPT)	770 Tons/Day	0.0438 lbs/1000lbs	67.5	0.102 lbs/1000lbs	157
420.113 (BAT)		-------	---------	--------	--------
420.122(a)(1) (BPT)	2,641 Tons/Day	0.0751 lbs/1000lbs	397	0.175 lbs/1000lbs	924
420.123(a)(1) (BAT)		-------	---------	--------	--------
420.122(c) (BPT)	2 Scrubbers	16.3 kg/day	71.7	38.1 kg/day	168
420.123(c) (BAT)		-------	---------	--------	--------
433.13(a) (BPT)	1.73 MGD	31 mg/l	447[3]	60 mg/l	866
433.14(a) (BAT)		-------	---------	--------	--------
Total TSS Limitation		1,119 lbs/day		2,429 lbs/day	

[1] Below is an example TSS calculation for Hydrochloric Acid Pickling; Strip, Sheet, & Plate:

$$\text{TSS Average Monthly Limit} = 1{,}712\frac{tons}{day} \times 2000\frac{lb}{ton} \times 0.035\frac{lb}{1000lb} = 120\frac{lb}{day}$$

[2] Below is an example TSS calculation for Hydrochloric Acid Pickling; Fume Scrubbers:

$$\text{TSS Average Monthly Limit} = 2.45\frac{kg}{day} \times 2.20\frac{lb}{kg} \times 1 Scrubber = 5.40\frac{lb}{day}$$

[3] Below is an example TSS calculation for Metal Finishing:

$$\text{TSS Average Monthly Limit} = 31\frac{mg}{l} \times 8.34\frac{(lb/MG)}{(mg/l)} \times 1.73\frac{MG}{day} = 447\frac{lb}{day}$$

Oil and Grease					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT)	1,712 Tons/Day	0.0117 lbs/1000lbs	40.1	0.0350 lbs/1000lbs	120
420.93(b)(2) (BAT)		-------	---------	--------	--------
420.92(b)(4) (BPT)	1 Scrubber	0.819 kg/day	1.80	2.45 kg/day	5.39
420.93(b)(4) (BAT)		-------	---------	--------	--------
420.102(a)(2) (BPT)	1,712 Tons/Day	0.00104 lbs/1000lbs	3.56	0.00261 lbs/1000lbs	8.94
420.103(a)(2) (BAT)		-------	---------	--------	--------
420.112(b) (BPT)	770 Tons/Day	0.0146 lbs/1000lbs	22.5	0.0438 lbs/1000lbs	67.5
420.113 (BAT)		-------	---------	--------	--------
420.122(a)(1) (BPT)	2,641 Tons/Day	0.0250 lbs/1000lbs	132	0.0751 lbs/1000lbs	397
420.123(a)(1) (BAT)		-------	---------	--------	--------
420.122(c) (BPT)	2 Scrubbers	5.45 kg/day	24.0	16.3 kg/day	71.7
420.123(c) (BAT)		-------	---------	--------	--------
433.13(a) (BPT)	1.73 MGD	26 mg/l	375	52 mg/l	750
433.14(a) (BAT)		-------	---------	--------	--------
Total O+G Limitation		599 lbs/day		1,421 lbs/day	

Lead					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT)	1,712 Tons/Day	0.000175 lbs/1000lbs	0.599	0.000526 lbs/1000lbs	1.80
420.93(b)(2) (BAT)		0.000175 lbs/1000lbs	0.599	0.000526 lbs/1000lbs	1.80
420.92(b)(4) (BPT)	1 Scrubber	0.0123 kg/day	0.0271	0.0368 kg/day	0.0810
420.93(b)(4) (BAT)		0.0123 kg/day	0.0271	0.0368 kg/day	0.0810
420.102(a)(2) (BPT)	1,712 Tons/Day	0.0000156 lbs/1000lbs	0.0534	0.0000469 lbs/1000lbs	0.161
420.103(a)(2) (BAT)		0.0000156 lbs/1000lbs	0.0534	0.0000469 lbs/1000lbs	0.161
420.112(b) (BPT)	770 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,641 Tons/Day	0.000376 lbs/1000lbs	1.99	0.00113 lbs/1000lbs	5.97
420.123(a)(1) (BAT)		0.000376 lbs/1000lbs	1.99	0.00113 lbs/1000lbs	5.97
420.122(c) (BPT)	2 Scrubbers	0.0819 kg/day	0.360	0.245 kg/day	1.08
420.123(c) (BAT)		0.0123 kg/day	0.0541	0.0368 kg/day	0.162
433.13(a) (BPT)	1.73 MGD	0.43 mg/l	6.20	0.69 mg/l	9.96
433.14(a) (BAT)		0.43 mg/l	6.20	0.69 mg/l	9.96
Total Lead Limitation		8.92 lbs/day		18.1 lbs/day	

Zinc					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT)	1,712 Tons/Day	0.000234 lbs/1000lbs	0.801	0.000701 lbs/1000lbs	2.40
420.93(b)(2) (BAT)		0.000234 lbs/1000lbs	0.801	0.000701 lbs/1000lbs	2.40
420.92(b)(4) (BPT)	1 Scrubber	0.0164 kg/day	0.0361	0.0491 kg/day	0.108
420.93(b)(4) (BAT)		0.0164 kg/day	0.0361	0.0491 kg/day	0.108
420.102(a)(2) (BPT)	1,712 Tons/Day	0.0000104 lbs/1000lbs	0.0356	0.0000313 lbs/1000lbs	0.107
420.103(a)(2) (BAT)		0.0000104 lbs/1000lbs	0.0356	0.0000313 lbs/1000lbs	0.107
420.112(b) (BPT)	770 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,641 Tons/Day	0.000500 lbs/1000lbs	2.64	0.00150 lbs/1000lbs	7.92
420.123(a)(1) (BAT)		0.000500 lbs/1000lbs	2.64	0.00150 lbs/1000lbs	7.92
420.122(c) (BPT)	2 Scrubbers	0.109 kg/day	0.480	0.327 kg/day	1.44
420.123(c) (BAT)		0.0164 kg/day	0.0722	0.0491 kg/day	0.216
433.13(a) (BPT)	1.73 MGD	1.48 mg/l	21.4	2.61 mg/l	37.7
433.14(a) (BAT)		1.48 mg/l	21.4	2.61 mg/l	37.7
Total Zinc Limitation		25.0 lbs/day		48.5 lbs/day	

Chromium					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	1,712 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	1,712 Tons/Day	COLD ROLLING WASTEWATERS ARE NOT TREATED WITH DESCALING OR COMBINATION ACID PICKLING WASTEWATERS. THEREFORE, CHROMIUM LIMITATIONS ARE NOT APPLICABLE FROM THIS CATEGORY.			
420.112(b) (BPT) **420.113** (BAT)	770 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,641 Tons/Day	FACILITY DOES NOT DISCHARGE CHROMATE RINSE FROM GALVANIZING OPERATIONS. THEREFORE, HEXAVALENT CHROMIUM LIMITATIONS ARE NOT APPLICABLE			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	FACILITY DOES NOT DISCHARGE CHROMATE RINSE FROM GALVANIZING OPERATIONS. THEREFORE, HEXAVALENT CHROMIUM LIMITATIONS ARE NOT APPLICABLE			
433.13(a) (BPT)	1.73 MGD	1.71 mg/l	24.7	2.77 mg/l	40.0
433.14(a) (BAT)		1.71 mg/l	24.7	2.77 mg/l	40.0
Total Chromium Limitation		24.7 lbs/day		40.0 lbs/day	

Nickel					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	3,828 Tons/Day	COLD ROLLING WASTEWATERS ARE NOT TREATED WITH DESCALING OR COMBINATION ACID PICKLING WASTEWATERS. THEREFORE, CHROMIUM LIMITATIONS ARE NOT APPLICABLE FROM THIS CATEGORY.			
420.112(b) (BPT) **420.113** (BAT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT)	1.73 MGD	2.38 mg/l	34.3	3.98 mg/l	57.4
433.14(a) (BAT)		2.38 mg/l	34.3	3.98 mg/l	57.4
Total Nickel Limitation		34.3 lbs/day		57.4 lbs/day	

Naphthalene					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	1,712 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT)	1,712 Tons/Day	---------	----------	0.0000104 lbs/1000lbs	0.0356
420.103(a)(2) (BAT)		---------	---------	0.0000104 lbs/1000lbs	0.0356
420.112(b) (BPT) **420.113** (BAT)	770 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,641 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT) **433.14(a)** (BAT)	1.73 MGD	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
Total Naphthalene Limitation		Report lbs/day		0.0356 lbs/day	

Tetrachloroethylene					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	1,712 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT)	1,712 Tons/Day	---------	----------	0.0000156 lbs/1000lbs	0.0534
420.103(a)(2) (BAT)		---------	---------	0.0000156 lbs/1000lbs	0.0534
420.112(b) (BPT) **420.113** (BAT)	770 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,641 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT) **433.14(a)** (BAT)	1.73 MGD	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
Total Tetrachloroethylene Limitation		Report lbs/day		0.0534 lbs/day	

Cadmium					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	3,828 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(4) (BPT) **420.103(a)(4)** (BAT)	1,042 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.112(b) (BPT) **420.113** (BAT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT)	1.73 MGD	0.26 mg/l	3.8	0.69 mg/l	10
433.14(a) (BAT)		0.26 mg/l	3.8	0.69 mg/l	10
Total Cadmium Limitation		3.8 lbs/day		10 lbs/day	

Copper					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	3,828 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(4) (BPT) **420.103(a)(4)** (BAT)	1,042 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.112(b) (BPT) **420.113** (BAT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT)	1.73 MGD	2.07 mg/l	29.9	3.38 mg/l	48.8
433.14(a) (BAT)		2.07 mg/l	29.9	3.38 mg/l	48.8
Total Copper Limitation		29.9 lbs/day		48.8 lbs/day	

Silver					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	3,828 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(4) (BPT) **420.103(a)(4)** (BAT)	1,042 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.112(b) (BPT) **420.113** (BAT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT)	1.73 MGD	0.24 mg/l	3.5	0.43 mg/l	6.2
433.14(a) (BAT)		0.24 mg/l	3.5	0.43 mg/l	6.2
Total Silver Limitation		3.5 lbs/day		6.2 lbs/day	

Total Cyanide					
40 CFR	**Production**	**Monthly Average**		**Daily Maximum**	
		Categorical Limitation	**Subtotal (lbs/day)**	**Categorical Limitation**	**Subtotal (lbs/day)**
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	3,828 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(4) (BPT) **420.103(a)(4)** (BAT)	1,042 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.112(b) (BPT) **420.113** (BAT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT)	1.73 MGD	0.65 mg/l	9.4	1.20 mg/l	17.3
433.14(a) (BAT)		0.65 mg/l	9.4	1.20 mg/l	17.3
Total Cyanide Limitation		9.4 lbs/day		17.3 lbs/day	

Total Toxic Organics					
40 CFR	Production	Monthly Average		Daily Maximum	
		Categorical Limitation	Subtotal (lbs/day)	Categorical Limitation	Subtotal (lbs/day)
420.92(b)(2) (BPT) **420.93(b)(2)** (BAT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.92(b)(4) (BPT) **420.93(b)(4)** (BAT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(2) (BPT) **420.103(a)(2)** (BAT)	3,828 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.102(a)(4) (BPT) **420.103(a)(4)** (BAT)	1,042 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.112(b) (BPT) **420.113** (BAT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(a)(1) (BPT) **420.123(a)(1)** (BAT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.122(c) (BPT) **420.123(c)** (BAT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.13(a) (BPT)	1.73 MGD	---------	----------	2.13 mg/l	30.7
433.14(a) (BAT)		---------	----------	2.13 mg/l	30.7
[redacted]					
Total Toxic Organics Limitation		----------		30.7 lbs/day	

The following TBELs are included in this NPDES permit and are included at Internal Outfall 101:

Total Suspended Solids (TSS), Total Cyanide, Total Toxic Organics (TTO), Total Chromium, and Nickel

The above mentioned parameters have TBELs that are more stringent than the Water Quality-Based Effluent Limitations (WQBELs). Therefore, the TBELs for monthly average and daily maximums, identified in the table above, are included at Internal Outfall 101.

Oil and Grease (O+G)

The calculated daily maximum and monthly average effluent limitations above are less stringent than the previous effluent limits at the internal monitoring location. However, O+G limitations must be considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) that prohibits oil or other substances in amounts sufficient to create a visible film or sheen on the receiving water. The water-quality based limitations included in this NPDES permit at the final outfall are concentration based (15.0 mg/l Daily Maximum and 10.0 mg/l Monthly Average). Therefore under the authority of Section 402 of the CWA, technology-based effluent limits are calculated using BPJ and applied at the internal monitoring location to ensure compliance with the Indiana water quality criteria for O+G. The mass limitations are calculated by multiplying the flow from Internal Outfall 101 of 5.1 MGD by a conversion factor of 8.345 by the concentrations identified above for monthly average and daily maximum. Mass limitations are included at Internal Outfall 101 of 426 lbs/day Monthly Average and 638 lbs/day Daily Maximum.

Copper, Lead, and Zinc
The WQBELs for the above mentioned parameters are more stringent than the TBELs calculated in the table above. WQBELs at Outfall 001 were given as mass limits for Copper, Lead, and Zinc. During settlement negotiations of the previous permit, the facility requested that copper, lead, and zinc be removed from Outfall 001 because there was no Reasonable Potential to Exceed (RPE) Indiana Water Quality Standards for the parameters. IDEM would not remove the parameters entirely because the WQBELs were more stringent than federally promulgated ELGs at Internal Outfall 101. In an attempt to reduce duplicative monitoring, the facility requested to move the more stringent mass based WQBELs to the Internal Outfall. IDEM considers meeting those limits internally as being protective to Indiana's Water Quality Standards. The mass limitations are calculated by multiplying the flow from Internal Outfall 101 of 5.1 MGD by a conversion factor of 8.345 by the concentrations identified above for monthly average and daily maximum. The updated mass-based WQBELs included at Internal Outfall 101 are as follows:

Parameter	Monthly Average	Daily Maximum	Units
Copper	1.1	2.1	lbs/day
Lead	2.6	5.1	lbs/day
Zinc	8.5	17	lbs/day

Cadmium, Silver, Naphthalene, and Tetrachloroethylene (TCE)
In the previous permit, the facility requested a monitoring waiver for cadmium at Outfall 101 pursuant to 40 CFR 122.44(a)(2). A monitoring waiver for these pollutants was granted in the previous permit. A monitoring waiver may be granted for any guideline-based parameter if the discharger demonstrates through sampling that the pollutant is not present or is present only at background levels from intake water and without any increase due to the activities of the discharger. Based on a review of significant recent data for the above parameters, this agency has determined that the requirements of 40 CFR 122.44(a)(2) have been met. IDEM shall be notified if any changes occur at this facility that would require the conditions that this waiver was granted to be reviewed.

Hexavalent Chromium
Hexavalent Chromium, or Chromium-VI, monitoring was added to the previous permit. The reporting requirements are carried over to this permit.

5.3 Water Quality-Based Effluent Limits

The water quality-based effluent limitations for this facility are based on water quality criteria in 327 IAC 2-1.5-8 or under the procedures described in 327 IAC 2-1.5-11 through 327 IAC 2-1.5-16 and implementation procedures in 327 IAC 5.

Narrative Water Quality Based Limits
The narrative water quality contained under 327 IAC 2-1.5-8(b)(1) (A)-(E) have been included in this permit to ensure that the narrative water quality criteria are met.

Numeric Water Quality Based Limits
The numeric water quality criteria and values contained in this permit have been calculated using the tables of water quality criteria under 327 IAC 2-1.5-8(b) & (c).

Flow
The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)2.

pH
Limitations for pH in the proposed permit are taken from 327 IAC 2-1.5-8(c)(2).

Oil and Grease (O & G)
O & G limitations are 15.0 mg/l Daily Maximum and 10.0 mg/l Monthly Average. These limits are considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to produce color, visible sheen, odor, or other conditions in such a degree to create a nuisance.

Hexavalent Chromium
Hexavalent Chromium, or Chromium-VI, monitoring was added to the previous permit. Based on a review of the data, the discharge shows an RPE. Therefore, effluent limitations calculated in the WLA have been included in this permit. The limitations are 1.3 lbs/day (0.016 mg/l) monthly average and 3.5 lbs/day (0.032 mg/l) daily maximum.

Temperature
Based on the results of instream sampling and a multi-discharger thermal model, the discharges do not have a reasonable potential to exceed a water quality criterion for temperature. However, in accordance with 327 IAC 5-2-11.5(e), the commissioner may require monitoring for a pollutant of concern even if it is determined that a WQBEL is not required based on a reasonable potential determination. Therefore, monitoring for temperature is included at this outfall.

Total Residual Chlorine (TRC)
The TRC effluent limit was calculated in the WLA and is 1.3 lbs/day (0.016 mg/l) for monthly average and 3.0 lbs/day (0.038 mg/l) for the daily maximum. The limit is included because the facility chlorinates/dechlorinates water. The daily maximum WQBEL for TRC is greater than the Level of Detection (LOD) but less than the Level of Quantization (LOQ). Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ (0.06 mg/l). Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 4.8 lbs/day. Monitoring for TRC shall be performed, at a minimum, during Zebra or Quagga mussel intake chlorination, and continue for three additional days after Zebra or Quagga mussel treatment has been completed.

Mercury
Mercury was included in the previous permit because it showed a Reasonable Potential to Exceed (RPE) Indiana's Water Quality Criteria. Therefore, WQBELs for mercury were

calculated in the WLA report and identify the monthly average as 0.00010 lbs/day (1.3 ng/l) and the daily maximum as 0.00025 lbs/day (3.2 ng/l).

Total Suspended Solids and Total Cyanide
Reporting requirements for the above mentioned parameters were included in the previous permit. The reporting requirements are carried over to this permit.

Free Cyanide
Reporting requirements for free cyanide was included in the previous permit. As part of this permit renewal, a Wasteload Analysis (WLA) report was completed and free cyanide was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that free cyanide has reasonable potential to exceed; therefore, water quality based effluent limitations are required and have been include in the permit. The limitations are 1.7 lbs/day (0.022 mg/l) monthly average and 3.5 lbs/day (0.044 mg/l) daily maximum.

Fluoride
Fluoride monitoring was included in the previous permit to determine if a Reasonable Potential to Exceed (RPE) Indiana WQBELs exists. Based on a review of the previous permit cycle's data, it was determined that a RPE for this parameter does not exist. Therefore, this parameter has been removed from this permit.

5.4 Whole Effluent Toxicity Testing (WETT)

Per 327 IAC 5-2-11.5(c)(2), the commissioner may include, in the NPDES permit, WETT requirements to generate the data needed to adequately characterized the toxicity of the effluent to aquatic life.

In accordance with 327 IAC 2-1.5-8, at all times the discharge from any and all point sources specified within this permit shall not cause receiving waters including the mixing zone, to contain substances, materials, floating debris, oil, scum, or other pollutants: 1) which are in amounts sufficient to be acutely toxic to or to otherwise severely injure or kill aquatic life, other animals, plants, or humans; and 2) outside the mixing zone, to contain substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

A discharge shall not cause acute toxicity, as measured by whole effluent toxicity tests (WETT), at any point in the waterbody. To assure protection of aquatic life, a discharge shall not cause chronic toxicity, as measured by whole effluent toxicity tests, outside of the applicable mixing zone.

Therefore, the permittee is required to continue to conduct WETT to determine the toxicity of the final effluent. This does not preclude the requirement to submit WTA application(s) and/or worksheet(s) for the replacement or new additives/chemicals proposed for use at the site.

5.5 Antibacksliding

None of the limits included in this permit conflict with antibacksliding regulations found in 327 IAC 5-2-10(11), therefore, backsliding is not an issue.

5.6 Antidegradation

327 IAC 2-1.3 outlines the state's Antidegradation Standards and Implementation procedures. The Tier 1 antidegradation standard found in 327 IAC 2-1.3-3(a) applies to all surface waters of the state regardless of their existing water quality. Based on this standard, for all surface waters of the state, the existing uses and level of water quality necessary to protect those existing uses shall be maintained and protected. IDEM implements the Tier 1 antidegradation standard by requiring NPDES permits to contain effluent limits and best management practices (BMPs) for regulated pollutants that ensure the narrative and numeric water quality criteria applicable to each of the designated uses are achieved in the water and any designated uses of the downstream water are maintained and protected.

The Tier 2 antidegradation standard found in 327 IAC 2-1.3-3(b) applies to surface waters of the state where the existing quality for a parameter is better than the water quality criterion for that parameter established in 327 IAC 2-1-6 or 327 IAC 2-1.5. These surface waters are considered high quality for the parameter and this high quality shall be maintained and protected unless the commissioner finds that allowing a significant lowering of water quality is necessary and accommodates important social or economic development in the area in which the waters are located. IDEM implements the Tier 2 antidegradation standard for regulated pollutants with numeric water quality criteria quality adopted in or developed pursuant to 327 IAC 2-1-6 or 327 IAC 2-1.5 and utilizes the antidegradation implementation procedures in 327 IAC 2-1.3-5 and 2-1.3-6.

According to 327 IAC 2-1.3-1(b), the antidegradation implementation procedures in 327 IAC 2-1.3-5 and 2-1.3-6 apply to a proposed new or increased loading of a regulated pollutant to surface waters of the state from a deliberate activity subject to the Clean Water Act (CWA), including a change in process or operation that will result in a significant lowering of water quality.

This permit includes new permit limitations for free cyanide and hexavalent chromium. In accordance with 327 IAC 2-1.3-1(b), the new permit limitations are not subject to the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 as the new permit limitations are not the result of a deliberate activity taken by the permittee. The new permit limitations are a result of monitoring data showing that these parameters have a reasonable potential to exceed Indiana water quality standards.

The permittee is prohibited from undertaking any deliberate action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality, or an antidegradation demonstration submitted and approved in accordance 327 IAC 2-1.3.

5.7 Storm Water

According to 40 CFR 122.26(b)(14)(ii) and 327 IAC 5-4-6(b)(1) facilities classified under Industrial Classification (SIC) Code 3312, are considered to be engaging in "industrial activity" for purposes of 40 CFR 122.26(b). Therefore, the permittee is required to have all storm water discharges associated with industrial activity permitted. Treatment for storm water discharges associated with industrial activities is required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to the best practicable technology (BPT) or BAT/BCT for storm water associated with industrial activity.

Storm water associated with industrial activity must be assessed to determine compliance with all water quality standards. The non-numeric storm water conditions and effluent limits contain the technology-based effluent limitations. Effluent limitations, as defined in the CWA, are restrictions on quantities, rates, and concentrations of constituents which are discharged. Effective implementation of these requirements should meet the applicable water quality based effluent limitations. Violation of any of these effluent limitations constitutes a violation of the permit.

Additionally, IDEM has determined that with the appropriate implementation of the required control measures and Best Management Practices (BMPs) found in Part I.D. of the permit, the discharge of storm water associated with industrial activity from this facility will meet applicable water quality standards and will not cause a significant lowering of water quality. Therefore, the storm water discharge is in compliance with Antidegradation Standards and Implementation Procedures found in 327 IAC 2-1.3 and an Antidegradation Demonstration is not required.

The TBELs require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. In addition, the permittee is required to: (1) use good housekeeping practices to keep exposed areas clean, (2) regularly inspect, test, maintain and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in storm water discharges, (3) minimize the potential for leaks, spills and other releases that may be exposed to storm water and develop plans for effective response to such spills if or when they occur, (4) stabilize exposed area and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants, (5) divert, infiltrate, reuse, contain or otherwise reduce storm water runoff, to minimize pollutants in the permitted facility discharges, (6) enclose or cover storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, (7) train all employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team, (8) ensure that waste, garbage and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged, and (9) minimize generation of dust and off-site tracking of raw, final or waste materials.

To meet the non-numeric effluent limitations in Part I.D.4, the permit requires the facility to select control measures (including BMPs) to address the selection and design considerations in Part I.D.3.

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the non-numeric effluent limitations and other terms and conditions in this permit will meet this effluent limitation. However, if at any time the permittee, or IDEM, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions, and conduct follow-up monitoring.

"Terms and Conditions" to Provide Information in a Storm Water Pollution Prevention Plan (SWPPP)

Distinct from the effluent limitation provisions in the permit, the permit requires the discharger to prepare a SWPPP for the permitted facility. The SWPPP is intended to document the selection, design, installation, and implementation (including inspection, maintenance, monitoring, and corrective action) of control measures being used to comply with the effluent limits set forth in Part I.D. of the permit. In general, the SWPPP must be kept up-to-date, and modified when necessary, to reflect any changes in control measures that were found to be necessary to meet the effluent limitations in the permit.

The requirement to prepare a SWPPP is not an effluent limitation, rather it documents what practices the discharger is implementing to meet the effluent limitations in Part I.D. of the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. Instead, the requirement to develop a SWPPP is a permit "term or condition" authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, "[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate." The SWPPP requirements set forth in this permit are terms or conditions under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it up-to-date is no different than other information collection conditions, as authorized by section 402(a)(2).

It should be noted that EPA has developed a guidance document, "Developing your Storm Water Pollution Prevention Plan – A guide for Industrial Operators (EPA 833-B09-002), February 2009, to assist facilities in developing a SWPPP. The guidance contains worksheets, checklists, and model forms that should assist a facility in developing a SWPPP.

Public availability of documents

Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and it must be immediately available, at the time of an onsite inspection or upon request, to IDEM. Additionally, interested persons can request a copy of the SWPPP through

IDEM. By requiring members of the public to request a copy of the SWPPP through IDEM, the Agency is able to provide the permittees with assurance that any Confidential Business Information contained within the permitted facility's SWPPP is not released to the public.

5.8 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives that could significantly change the nature of, or increase the discharge concentration of any of the additives contributing to Outfall 001, the permittee shall notify the IDEM as required in Part II.C.1 of the permit. The use of any new or changed water treatment additives/chemicals or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates. The following is a list of water treatment additives currently approved for use at the facility: Bleach, Sulfuric Acid, Ferric Chloride, NalClear 7763, Nalco Ultrion 8157, Caustic, Hydrated Lime, and Nalco 7408.

6.0 PERMIT DRAFT DISCUSSION

6.1 Discharge Limitations

The proposed final effluent limitations are based on the more stringent of the Indiana WQBELs, TBELS, or approved TMDLs and NPDES regulations as appropriate for each regulated outfall. Sections 5.2 and 5.3 of this document explain the rationale for the effluent limitations at each Outfall.

Outfall 001:

Parameter	Monthly Average	Daily Maximum	Units	Source of Limitation
Flow	Report	Report	MGD	IAC
Oil and Grease	Report 10	Report 15	lbs/d mg/l	BPJ/WQBEL
TSS	Report	Report	lbs/d & mg/l	WQBEL
TRC	1.3 0.016	3.0 0.038	lbs/d mg/l	WQBEL
Mercury	0.00010 1.3	0.00025 3.2	lbs/d ng/l	WQBEL
Free Cyanide	1.7 0.022	3.5 0.044	lbs/d mg/l	WQBEL
Total Cyanide	Report	Report	lbs/d & mg/l	WQBEL
Hexavalent Chromium	1.3 0.016	3.5 0.032	lbs/d mg/l	WQBEL
Temperature	Report	Report	°F	WQBEL
Whole Effluent Toxicity	7.1	1.0	TUc TUa	WQBEL

Parameter	Daily Minimum	Daily Maximum	Units	Source of Limitation
pH	6.0	9.0	Std Units	WQBEL

Internal Outfall 101:

Parameter	Monthly Average	Daily Maximum	Units	Source of Limitation
Flow	Report	Report	MGD	IAC
Oil and Grease	426 Report	638 Report	lbs/d mg/l	BPJ/WQBEL
TSS	1119 Report	2429 Report	lbs/d mg/l	TBEL
Cadmium	3.8 Report	10 Report	lbs/d mg/l	TBEL
Zinc	8.5 Report	17 Report	lbs/d mg/l	WQBEL
Total Chromium	24.7 Report	40.0 Report	lbs/d mg/l	TBEL
Hexavalent Chromium	Report	Report	lbs/d & mg/l	WQBEL
Lead	2.6 Report	5.1 Report	lbs/d mg/l	WQBEL
Nickel	34.3 Report	57.4 Report	lbs/d mg/l	TBEL
Copper	1.1 Report	2.1 Report	lbs/d mg/l	WQBEL
Silver	0.021 Report	0.043 Report	lbs/d mg/l	WQBEL
T. Cyanide	9.4 Report	17.3 Report	lbs/d mg/l	TBEL
Naphthalene	Report Report	0.0356 Report	lbs/d mg/l	TBEL
Tetrachloroethylene	Report Report	0.0534 Report	lbs/d mg/l	TBEL
TTO	---------- ----------	30.7 Report	lbs/d mg/l	TBEL

6.2 Monitoring Conditions and Rationale

Analytical and sampling methods used shall conform to the version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

Outfall 001

Parameter	Minimum Frequency	Sample Type
Flow	1 X Daily	24 Hr. Total
Oil and Grease	2 X Weekly	2 Grabs/24-Hr.
TSS	2 X Weekly	24-Hr. Comp.
TRC	5 X Weekly	Grab
Mercury	6 X Yearly	Grab
Free Cyanide	2 X Monthly	Grab
Total Cyanide	2 X Monthly	Grab
Hexavalent Chromium	2 X Monthly	Grab
Temperature	2 X Weekly	Grab
Whole Effluent Toxicity	See Part I.F of the Permit	
pH	2 X Weekly	Grab

Internal Outfall 101

Parameter	Minimum Frequency	Sample Type
Flow	1 X Daily	24 Hr. Total
Oil and Grease	2 X Weekly	2 Grabs/24-Hr.
TSS	2 X Weekly	24-Hr. Comp.
Cadmium	[&]	24-Hr. Comp.
Zinc	2 X Weekly	24-Hr. Comp.
Total Chromium	2 X Weekly	24-Hr. Comp.
Hexavalent Chromium	2 X Monthly	Grab
Lead	2 X Weekly	24-Hr. Comp.
Nickel	2 X Weekly	24-Hr. Comp.
Copper	2 X Weekly	24-Hr. Comp.
Silver	[&]	24-Hr. Comp.
T. Cyanide	2 X Weekly	Grab
Naphthalene	[&]	Grab
Tetrachloroethylene	[&]	Grab
TTO	1 X Quarterly	Grab

[&] Monitoring Waiver Granted

6.3 Schedule of Compliance

The draft permit contains new effluent limits for Hex Chromium and Free Cyanide. 40 CFR 122.47(a), 40 CFR 123.25(a)(18), and 327 IAC 5-2-12 allow a schedule of compliance in a NPDES permit when requested and justified by the permittee, but only when appropriate and when the schedule of compliance requires achievement of compliance “as soon as possible”

and meets other specified conditions. In order to include a schedule of compliance the permittee must submit a request and de8monstrate that they meet the requirements for 40 CFR 122.47(a) and 327 IAC 5-2-12.

6.4 Special Conditions and Other Permit Requirements

6.4.1 Thermal Effluent Limitations

Based on the results of instream sampling and a multi-discharger thermal model, the discharge from Outfall 001 does not have a reasonable potential to exceed the water quality criterion for temperature. Under 5-2-11.5(e), the commissioner may require monitoring for a pollutant of concern even if it is determined that a WQBEL is not required based on a reasonable potential determination. Thermal effluent requirements are being included in this permit to maintain compliance with Indiana Water Quality Standards.

Temperature shall be monitored as follows at Outfall 001:

DISCHARGE LIMITATIONS

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Temperature								
Intake [2]	----	----	----	Report	Report	°F	2 X Week	Grab
Outfall[1]	----	----	----	Report	Report	°F	2 X Week	Grab

[1] Temperature at Outfall 001 shall be sampled between the hours of 12 pm and 4 pm. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24 hour period.

[2] On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall.

6.4.2 Clean Water Act Section 316(b) Cooling Water Intake Structure(s) (CWIS)

Section 316(b) of the federal Clean Water Act requires that facilities minimize adverse environmental impact resulting from the operation of cooling water intake structures (CWISs) by using the “best technology available” (BTA). The ArcelorMittal Indiana Harbor West facility supplies the source water received by the ArcelorMittal Indiana Harbor Central Wastewater Treatment Plant. The CWISs associated with this permit and ArcelorMittal Indiana Harbor West’s permit (IN0000205) are regulated under ArcelorMittal Indiana Harbor West’s NPDES Permit (IN0000205). NPDES Permit IN0000205 contains IDEM’s BTA determination. For further information and requirements pertaining to CWISs, please refer to NPDES Permit IN0000205.

6.4.3 Polychlorinated Biphenyl (PCB)

There shall be no discharge of polychlorinated biphenyl (PCB) compounds attributable to facility operations such as those historically used in transformer fluids. In order to determine

compliance with the PCB discharge prohibition, the permittee shall provide the following PCB data with the next NPDES permit renewal application for at least one sample taken from each final outfall. The corresponding facility water intakes shall be monitored at the same time as the final outfalls.

Pollutant	Test Method	LOD	LOQ
PCBs*	EPA 608	0.1 ug/L	0.3 ug/L

*PCB 1242, 1254, 1221, 1232, 1248, 1260, 1016

6.5 Spill Response and Reporting Requirement

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.(d), Part II.B.3.(c), and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

6.6 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish a general notice in the newspaper with the largest general circulation within the above county. A 30-day comment period is available in order to solicit input from interested parties, including the general public. Comments concerning the draft permit should be submitted in accordance with the procedure outlined in the enclosed public notice form.

Attachment A
Water Quality Assessment

Use Classifications

The Indiana Harbor Canal and Indiana Harbor are designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The Indiana Harbor is designated as an industrial water supply. The Indiana portion of the open waters of Lake Michigan is designated for full-body contact recreation; shall be capable of supporting a well-balanced, warm water aquatic community; is designated as salmonid waters and shall be capable of supporting a salmonid fishery; is designated as a public water supply; is designated as an industrial water supply; and, is classified as an outstanding state resource water. These waterbodies are identified as waters of the state within the Great Lakes system. As such, they are subject to the water quality standards and associated implementation procedures specific to Great Lakes system dischargers as found in 327 IAC 2-1.5, 327 IAC 5-1.5, and 327 IAC 5-2.

Section 303(d) of the Clean Water Act requires states to identify waters, through their Section 305(b) water quality assessments, that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of impaired waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. Indiana's 2014 303(d) List of Impaired Waters was developed in accordance with Indiana's Water Quality Assessment and 303(d) Listing Methodology for Waterbody Impairments and Total Maximum Daily Load Development for the 2014 Cycle. As of the 2014 303(d) List of Impaired Waters, the following impairments were listed for waters to which the permittee discharges:

Table 1

Assessment Unit	Waterbody	Impairments	ArcelorMittal Central WWTP Outfall
INC0163_T1001	Indiana Harbor Canal	Impaired Biotic Communities, Oil and Grease, *E. coli* and PCBs in Fish Tissue	001
INC0163G_G1078	Indiana Harbor	Free Cyanide, Mercury in Fish Tissue and PCBs in Fish Tissue	None
INM00G1000_00	Lake Michigan	Mercury in Fish Tissue and PCBs in Fish Tissue	None

Water Quality Based Effluent Limitations

The water quality-based effluent limitations included in the 2011 permit and documented in the Fact Sheet were developed as part of a wasteload allocation analysis for the Indiana Harbor Canal presented in the report "Supplemental Information for the Wasteload Allocation Analysis for the ArcelorMittal Indiana

Harbor 2011 Draft Permits" dated August 19, 2011. The wasteload allocation included a multi-discharger model that was limited to the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed. Pollutants selected for the multi-discharger model were based on water quality concerns and the application of technology-based effluent limitations at multiple outfalls. Water quality-based effluent limitations (WQBELs) for lead, zinc and total residual chlorine were calculated for ArcelorMittal Central WWTP Outfall 001 as part of the multi-discharger model. The 2011 wasteload allocation (WLA) also included WQBELs for specific pollutants calculated on an individual outfall basis.

The 2011 WLA was developed using Indiana water quality regulations for discharges to waters within the Great Lakes system that include water quality criteria and methodologies for developing water quality criteria (327 IAC 2-1.5), procedures for calculating WLAs (327 IAC 5-2-11.4), making reasonable potential to exceed determinations (5-2-11.5) and developing WQBELs (5-2-11.6). These regulations are applicable to individual pollutants and to whole effluent toxicity (WET). These regulations are still applicable and were used in the current WLA analysis for the Indiana Harbor Canal presented in the report "Supplemental Information for the Wasteload Allocation Analysis for the ArcelorMittal Indiana Harbor 2016 Draft Permits" dated November 16, 2016. The application of WET requirements to ArcelorMittal is included in a later section.

The current subwatershed model for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor included the ArcelorMittal Central WWTP which has one active outfall to the Indiana Harbor Canal. This outfall is the first ArcelorMittal outfall in the subwatershed. The other major dischargers included in the subwatershed model are as follows in relation to the ArcelorMittal Central WWTP: ArcelorMittal Indiana Harbor – Indiana Harbor West (IN0000205) has three active outfalls downstream to the Indiana Harbor Canal, one active outfall downstream to the Indiana Harbor, and one water intake in the Indiana Harbor near the mouth of the Indiana Harbor Canal; and, ArcelorMittal USA – Indiana Harbor East (IN0000094) has three active outfalls downstream to the Indiana Harbor. The discharges from these two facilities were taken into consideration in determining the need for and establishing WQBELs for the discharge from ArcelorMittal Central WWTP Outfall 001.

A review of the 2014 303(d) list shows that there is only one pollutant on the list that has the potential to impact wasteload allocation analyses conducted for the renewal of NPDES permits for dischargers in the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed. The Indiana Harbor was first listed for free cyanide on the 2010 303(d) list. The listing was based on free cyanide data collected during the years 2000 and 2001 at IDEM fixed station
IHC-0 in the Indiana Harbor. This station is located just upstream of ArcelorMittal West Outfall 011 and, due to the potential for reverse flows in the Indiana Harbor, could be impacted by the outfall. It is also located downstream of ArcelorMittal East Outfalls 011, 014 and 018. The aquatic life criteria for cyanide were changed from total cyanide to free cyanide in the 1997 Great Lakes rulemaking. It is IDEM current practice to monitor for total cyanide at fixed stations and analyze samples for free cyanide only when total cyanide data show a reportable concentration ($\geq$ 5 ug/l). After 2001, data collected at fixed station IHC-0 no longer showed any reportable values for total cyanide so free cyanide data have not been collected. ArcelorMittal West has also installed additional treatment and redirected cyanide containing process wastewater away from Outfall 011.

The Indiana Harbor Canal has not been included on the 303(d) list for free cyanide due to the two IDEM fixed stations in the Indiana Harbor Canal (located upstream of fixed station IHC-0 at Columbus Avenue (IHC-3S) and Dickey Road (IHC-2)) not showing impairment for free cyanide. There has not been a

value for total cyanide above 5 ug/l reported at IHC-3S since February 2007 and at IHC-2 since January 2005. Prior to the 2011 permit renewal, total cyanide had been reported at many of the ArcelorMittal outfalls due to technology-based limits for this parameter, but little data for free cyanide was available. Therefore, in the 2011 permit renewal, monitoring was required for free cyanide at ArcelorMittal outfalls that have process wastewater for use in an assessment of reasonable potential.

A TMDL is not currently planned for the subwatershed, and, based on current IDEM monitoring data, may not be required. Therefore, as was done in the 2011 WLA, the procedures for calculating WLAs under 5-2-11.4 were used to develop preliminary WLAs and WLAs in the absence of a TMDL. Wasteload allocations in the absence of TMDLs are developed to establish water quality-based effluent limitations under 5-2-11.6 and preliminary wasteload allocations are developed to make reasonable potential determinations under 5-2-11.5. The reasonable potential procedures under 5-2-11.5 include provisions for making reasonable potential determinations using best professional judgment (5-2-11.5(a)) and using a statistical procedure (5-2-11.5(b)). The statistical procedure is a screening process in which a projected effluent quality (PEQ) based on effluent data is calculated and compared to a preliminary effluent limitation (PEL) based on the preliminary wasteload allocation. Both the best professional judgment and statistical procedures were used to establish the need for WQBELs to protect the designated uses of the Indiana Harbor Canal, Indiana Harbor, and Lake Michigan.

To develop WLAs and conduct reasonable potential to exceed analyses, IDEM utilized the following effluent data collected and submitted by ArcelorMittal for the Central WWTP: data collected during the period December 2011 through June 2016 in accordance with the 2011 permit renewal and 2014 permit modification and reported on monthly monitoring reports (MMRs); data for ammonia-N collected in 1999 as part of the Grand Calumet River TMDL study and data for ammonia-N collected for the 2009 permit renewal application update; and, additional data collected for the 2016 permit renewal application. To develop WLAs, IDEM utilized the following sources of water quality data for the Indiana Harbor Canal and Indiana Harbor: IDEM fixed water quality monitoring station IHC-3S at Columbus Drive (Indiana Harbor Canal upstream of Lake George Canal and all ArcelorMittal outfalls); IDEM fixed station IHC-2 at Dickey Road (Indiana Harbor Canal); and, IDEM fixed station IHC-0 at the mouth of the Indiana Harbor. To develop WLAs, IDEM utilized the following sources of data for Lake Michigan: IDEM fixed station LM-H at the public water supply intake for the City of Hammond and IDEM fixed station LM-DSP at Dunes State Park. After a review of effluent and in-stream data, it was decided to conduct a multi-discharger WLA for ammonia-N, free cyanide, fluoride, lead, zinc and total residual chlorine. Other pollutants of concern, including mercury, were considered on an outfall by outfall basis.

In the 2011 multi-discharger model, the Indiana Harbor Canal was divided into sixteen complete mix segments and the Indiana Harbor into five complete mix segments. The Lake George Canal was incorporated as an input to the Indiana Harbor Canal. The intrusion of lake water was accounted for in the model by adding a portion of the total lake intrusion flow to the surface layer of each of nine affected segments in the Indiana Harbor and Indiana Harbor Canal. A total lake intrusion flow of 138 cfs was used based on a measurement made by the USGS in October 2002 during a normal lake level condition. The procedures in 5-2-11.4 require the more stringent of the FAV or the acute WLA calculated using up to a one-to-one dilution to be applied to individual outfalls. They also limit the dilution available for each outfall (the mixing zone) to twenty-five percent (25%) of the stream design flow. Because of the potential for overlapping mixing zones within a segment, the combined discharges in a segment were also limited collectively to twenty-five percent (25%) of the stream design flow. This was done in accordance with 5-

2-11.4(b)(3)(D) which requires the combined effect of overlapping mixing zones to be evaluated to ensure that applicable criteria and values are met in the area where the mixing zones overlap.

Based on the reasonable potential statistical procedure at 5-2-11.5(b)(1)(iii) and (iv), the procedures under 5-2-11.4(c) are used as the basis for determining preliminary WLAs and the preliminary WLAs are then used to develop monthly and daily PELs in accordance with the procedure for converting WLAs into WQBELs under 5-2-11.6. Three critical inputs to the procedure under 5-2-11.4(c) include the background concentration, the effluent flow and the stream flow. The background concentration is determined under 5-2-11.4(a)(8). Under this rule, background concentrations can be determined using actual in-stream data or in-stream concentrations estimated using actual or projected pollutant loading data. In the multi-discharger WLA, in-stream data were used to establish the background concentration for the first segment of the model and then either actual or projected pollutant loading data were used. For pollutants not included in the multi-discharger WLA, in-stream data were used.

In the 2011 multi-discharger model, the flow assigned to each outfall was the long-term average flow using data from January 2006 through December 2007. This period was considered by ArcelorMittal to be the most representative of full operating conditions. Based on a review of flow data for the period January 2013 thru December 2015, it was determined that the flows used in the 2011 permit renewal are not representative of conditions expected during the term of the renewal permit. The termination of production at ArcelorMittal USA – Indiana Harbor Long Carbon (IN0063355) has resulted in the elimination of one significant discharge to the Indiana Harbor Canal. There has also been a significant reduction in the discharge flows from ArcelorMittal West Outfall 009 and ArcelorMittal East Outfall 011. The flow assigned to each outfall for ArcelorMittal Central WWTP and ArcelorMittal West was the long-term average flow calculated using data from the period January 2013 through December 2014. This period represents production prior to the idling in 2015 of operations contributing flow to ArcelorMittal Central WWTP and ArcelorMittal West. The flow assigned to each outfall for ArcelorMittal East was the long-term average flow calculated using data from the period January 2014 through December 2015. This period represents production after the permanent shutdown of the Nos. 5 and 6 blast furnaces in June 2013.

The stream design flow used to develop wasteload allocations is determined under 5-2-11.4(b)(3). For the pollutants considered in this analysis, the aquatic life criteria are limiting and the stream design flow for chronic aquatic life criteria is the Q7,10. As was done in the 2011 WLA, since the Q7,10 is the appropriate flow for the water quality criteria being considered, the Q7,10 was used as the upstream flow for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor WLA. Therefore, the stream design flow was set equal to the Q7,10 flow in the first segment of the multi-discharger model and then the long-term average flow of each discharger was added to become the stream design flow for downstream dischargers. The lake intrusion flow was added to the stream design flow at the end of each applicable segment. The Q7,10 was calculated using data from USGS gauging station 04092750 which is located in the Indiana Harbor Canal at Canal Street. The data used in the calculation consisted of continuous daily mean flow data approved by the USGS for the period 10-1-1994 through 3-31-2012. The Q7,10 based on the climatic year (April 1 through March 31) is 358 cfs.

At each applicable outfall, PELs were calculated for each pollutant of concern using an outfall specific spreadsheet that calculates PELs using the procedures under 5-2-11.4(c) to calculate WLAs and the procedures under 5-2-11.6 to convert WLAs into PELs. The spreadsheet considers all water quality criteria (acute and chronic aquatic life, human health and wildlife) and associated stream design flows and

mixing zones. The stream design flow for each water quality criterion was set equal to the same value in the outfall specific spreadsheet. This value was the Q7,10 flow plus the accumulation of long-term average effluent flow and any lake intrusion flow, minus any intake flow. For Mercury, which is a bioaccumulative chemical of concern (BCC), a mixing zone was not allowed in the development of PELs for any outfall in accordance with 5-2-11.4(b)(1). For those pollutants included in a multi-discharger WLA, the multi-discharger model was used to ensure that the most stringent water quality criterion is met at the edge of the mixing zone for each segment. This was the 4-day average chronic criterion. The multi-discharger model was also used to ensure that Lake Michigan criteria are met at the end of the last segment in the Indiana Harbor. The preliminary WLA was included as an input in the multi-discharger model and PELs were calculated from the preliminary WLA.

In the multi-discharger model, preliminary WLAs for each outfall were established, if possible, so that the monthly and daily PEQs did not exceed the PELs calculated from the preliminary WLAs. If TBELs were included for the parameter at a final outfall or an internal outfall, then the preliminary WLA was increased to the extent possible to allow the mass-based PELs to exceed the TBELs. The preliminary WLAs were adjusted as necessary so that the calculated PELs did not exceed the PELs calculated using the outfall specific spreadsheets and so that the water quality criterion was not exceeded at the edge of the mixing zone for each segment as determined using the multi-discharger model. For some outfalls, the discharge of one or more pollutants for which a multi-discharger WLA was conducted was not considered significant, so a preliminary WLA was established based on the reported effluent concentration, or if sufficient data were available, reported effluent loading data, but PELs were not calculated as allowed under 5-2-11.5(b)(1).

After assigning a preliminary WLA to each outfall in a segment and entering the WLA into the multi-discharger model, the model calculates the PELs for each outfall, the concentration at the edge of the mixing zone for the segment and the concentration at the end of each segment after complete mixing. The concentration after complete mixing then becomes the background concentration for the next segment. To calculate PELs using the outfall specific spreadsheets, the background concentration for each outfall was calculated assuming complete mixing between outfalls. This was done by entering the WLAs for each outfall into a separate spreadsheet that calculated the background concentration upstream of each outfall. By conducting a multi-discharger WLA in this manner, the background concentration for each outfall was based on the accumulated WLAs for the prior outfalls. Since the WLAs were based in some cases on projected effluent quality, the background concentrations were based on projected loading data. This provided a conservative means of determining the cumulative impact of the outfalls. For those pollutants not included in a multi-discharger WLA, the background concentration for each outfall was based on in-stream data.

The results of the reasonable potential statistical procedure are included in Table 2. The results show that the discharge from ArcelorMittal Central WWTP Outfall 001 has a reasonable potential to exceed a water quality criterion for free cyanide and hexavalent chromium.

In addition to establishing WQBELs based on the reasonable potential statistical procedure, IDEM is also required to establish WQBELs under 5-2-11.5(a) "If the commissioner determines that a pollutant or pollutant parameter (either conventional, nonconventional, a toxic substance, or whole effluent toxicity (WET)) is or may be discharged into the Great Lakes system at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable narrative criterion or numeric water quality criterion or value under 327 IAC 2-1.5". Chlorine is added to the intake water for zebra and

quagga mussel control at concentrations exceeding water quality criteria. Outfall 001 receives noncontact cooling water. Therefore, chlorine may be discharged from Outfall 001 at a level that will cause an excursion above the numeric water quality criterion for total residual chlorine under 2-1.5 and WQBELs for total residual chlorine are required at Outfall 001.

For each pollutant receiving TBELs at an internal outfall, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were calculated at the final outfall. The WQBELs were set equal to the applicable PELs from the multi-discharger model or the outfall specific spreadsheet. This was done for ArcelorMittal Central WWTP Outfall 001 (cadmium, total chromium, copper, lead, nickel, silver, zinc, naphthalene and tetrachloroethylene at internal Outfall 101). The facility does not discharge wastewater from the chromate rinse step of their galvanizing operations so TBELs and subsequent WQBELs were not calculated for hexavalent chromium for this purpose. The mass-based WQBELs at the final outfall were compared to the mass-based TBELs. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs exceed the mass-based WQBELs at the final outfall, the pollutant may be discharged at a level that will cause an excursion above a numeric water quality criterion or value under 2-1.5 and WQBELs are required for the pollutant at the final outfall. This was the case for cadmium, copper, lead, silver and zinc. Therefore, WQBELs are required for these pollutants regardless of the results of the reasonable potential statistical procedure. Once a determination is made using the reasonable potential provisions under 5-2-11.5 that WQBELs must be included in the permit, the WQBELs are calculated in accordance with 5-2-11.5(d). Under this provision, in the absence of an EPA-approved TMDL, WLAs are calculated for the protection of acute and chronic aquatic life, wildlife, and human health in accordance with the WLA provisions under 5-2-11.4. The WLAs are then converted into WQBELs in accordance with the WQBEL provisions under 5-2-11.6. The WQBELs are included in Table 4 and were set equal to the PELs calculated for each pollutant.

Whole Effluent Toxicity Testing Requirements

The 1997 Indiana Great Lakes regulations included narrative criteria with numeric interpretations for acute (2-1.5-8(b)(1)(E)(ii)) and chronic (2-1.5-8(b)(2)(A)(iv)) whole effluent toxicity (WET) and a procedure for conducting reasonable potential for WET (5-2-11.5(c)(1)). U.S. EPA did not approve the reasonable potential procedure for WET so Indiana is now required by 40 CFR Part 132.6(c) to use the reasonable potential procedure in Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CFR Part 132. IDEM used this procedure in conducting the reasonable potential analysis for WET except that the equation was rearranged so that it is similar to the equation that IDEM uses for other pollutants and pollutant parameters.

The 2011 permit required ArcelorMittal to conduct monthly chronic toxicity testing for three months at Outfall 001 for *Ceriodaphnia dubia* and Fathead Minnow. Thereafter, testing was required quarterly for the most sensitive species. However, in January 2011, prior to permit renewal, the facility initiated a toxicity reduction evaluation (TRE) which was completed in December 2012. The facility conducted three confirmation tests beginning February 2013. No toxicity, as defined by the acute and chronic TRE triggers in the permit, was demonstrated in the confirmation tests. Toxicity testing for *Ceriodaphnia dubia*, as the most sensitive species, was then required quarterly for the duration of the permit. The representative dataset for the reasonable potential analysis was considered to begin with the February 2013 test. The results of the reasonable potential analysis are shown in Table 3. The results show that the discharge from Outfall 001 does not have a reasonable potential to exceed the numeric interpretation of the narrative criterion for acute or chronic WET.

The permittee will be required to conduct whole effluent toxicity testing of its effluent discharge from Outfall 001 using *Ceriodaphnia dubia*. The terms and conditions of the WET testing are contained in Part I.F. of the NPDES permit. Part I.F.1.c.(2) of the permit states that chemical analysis must accompany each effluent sample taken for bioassay test. The analysis detailed under Part I.A. should be conducted for each effluent sample. The effluent should be sampled using the sample type requirements specified in Part I.A. Questions regarding the WET testing procedures should be addressed to the Office of Water Quality, NPDES Permits Branch.

Chronic toxicity testing is required at Outfall 001. Acute toxicity is to be derived from chronic toxicity tests and toxicity is to be reported in terms of acute and chronic toxic units and compared to calculated TRE triggers. The TRE triggers are set equal to the acute and chronic WLAs for WET in accordance with 327 IAC 5-2-11.6(d). If either an acute or chronic TRE trigger is exceeded, another chronic WET test must be conducted within two weeks. If the results of any two consecutive tests exceed the applicable TRE trigger, ArcelorMittal must conduct a TRE. The TRE triggers are shown in Table 4.

Thermal Requirements

The Indiana Harbor Canal and Indiana Harbor shall be capable of supporting a well-balanced, warm water aquatic community. The water quality criteria for temperature applicable to these waterbodies are included in 327 IAC 2-1.5-8(c). Indiana regulations state that the temperature criteria apply outside a mixing zone, but the allowable mixing zone is not established in the rules. IDEM current practice is to allow fifty percent (50%) of the stream flow for mixing to meet temperature criteria. The implementation procedures under 327 IAC 5-2-11.4 for developing wasteload allocations for point source discharges address temperature under 5-2-11.4(d)(3). This provision states that temperature shall be addressed using a model, approved by the commissioner, that ensures compliance with the water quality criteria for temperature.

There is also no specific procedure in the rules for determining whether a discharger is required to have water quality-based effluent limits (WQBELs) for temperature. Therefore, the general provision for making reasonable potential determinations in 5-2-11.5(a) is applicable. This provision establishes that if the commissioner determines that a pollutant or pollutant parameter is or may be discharged into the Great Lakes system at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable narrative or numeric water quality criterion under 2-1.5, the commissioner shall incorporate WQBELs in an NPDES permit that will ensure compliance with the criterion. In making this determination, the commissioner shall exercise best professional judgment, taking into account the source and nature of the discharge, existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, and, where appropriate, the dilution of the effluent in the receiving water. The commissioner shall use any valid, relevant, representative information pertaining to the discharge of the pollutant.

The multi-discharger model for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed discussed above included four active outfalls discharging to the Indiana Harbor Canal and four active outfalls discharging to the Indiana Harbor that contain a thermal component such as noncontact cooling water or boiler blowdown as a source of wastewater. ArcelorMittal Central WWTP Outfall 001 has a flow of 9.5 mgd with Internal Outfall 101 having a flow of 5.1 mgd and the remaining consisting mostly of noncontact cooling water. The ArcelorMittal Central WWTP 2011 permit includes

temperature monitoring on the intake and outfall at a frequency of 2 times per week. The primary source of cooling water for Outfall 001 is the No. 2 intake at the end of the Lake Michigan intake channel. Monthly maximum temperature data reported for the period January 2012 through December 2015 for Outfall 001 were used in the analysis. The data follow a seasonal pattern with a maximum recorded temperature of 94.2 °F in August and September 2012.

The multi-discharger model accounted for the intrusion of lake water into the Indiana Harbor and Indiana Harbor Canal. The intrusion of lake water produces thermal stratification that ends at the railroad bridge about 0.7 miles upstream of the mouth of the Indiana Harbor Canal. The outfalls that discharge upstream of the railroad bridge are ArcelorMittal Central WWTP Outfall 001 and ArcelorMittal West Outfall 002 on the west side of the canal. ArcelorMittal West Outfalls 009 and 010, which are two large sources of non-contact cooling water, are the first two discharges downstream of the railroad bridge. A review of historical instream temperature data at IDEM fixed stations on the Indiana Harbor Canal and Indiana Harbor from January 1990 through December 2015 and IDEM fixed station LM-DSP on Lake Michigan at Dunes State Park from January 1997 through December 2015 shows that the maximum temperature values were recorded in July 1999 and July 2012. The average stream flow during the July 1999 and July 2012 temperature monitoring as recorded at USGS gaging station 04092750 in the Indiana Harbor Canal at Canal Street was 485 cfs in July 1999 and 521 cfs in July 2012 which are greater than the Q7,10 of 358 cfs, but less than the harmonic mean flow of 548 cfs.

In addition to the instream sampling, a multi-discharger model was used to assist in the reasonable potential analysis. The multi-discharger model for toxics discussed above was modified to account for temperature. The mixing zone was set at fifty percent (50%) of the stream flow to be consistent with current IDEM practice for mixing zones for temperature. The model does not account for heat dissipation so it represents a conservative, dilution only analysis. A Q7,10 flow of 358 cfs, long-term average effluent flows and background temperatures from fixed station IHC-3S were used in the multi-discharger thermal model as were used in the multi-discharger toxics model. The effluent temperature input to the model was set equal to the maximum temperature reported for the month during the period of representative data collection. For the ArcelorMittal Central WWTP outfall and ArcelorMittal West outfalls, this period was January 2012 through December 2015 since temperature monitoring was reinstated in their 2011 permits. For ArcelorMittal East Outfall 011, the representative period was also January 2012 through December 2015. For ArcelorMittal East Outfall 014, the period was January 1998 through December 2015 and for ArcelorMittal East Outfall 018 the period was June 1999 through December 2015 if it was considered representative data. The critical peak temperature months of June through September were included as one period since the same maximum criterion of 90°F applies each month.

The results of the conservative, dilution only modeling show that the discharge from ArcelorMittal Central WWTP Outfall 001 does not have a reasonable potential to cause or contribute to an excursion of the water quality criterion for temperature in the Indiana Harbor Canal from January through December. Based on the results of the instream sampling and multi-discharger thermal model, the discharge from ArcelorMittal Central WWTP Outfall 001 does not have a reasonable potential to exceed a water quality criterion for temperature. Under 5-2-11.5(e), the commissioner may require monitoring for a pollutant of concern even if it is determined that a WQBEL is not required based on a reasonable potential determination. Monitoring for temperature was continued in the renewal permit.